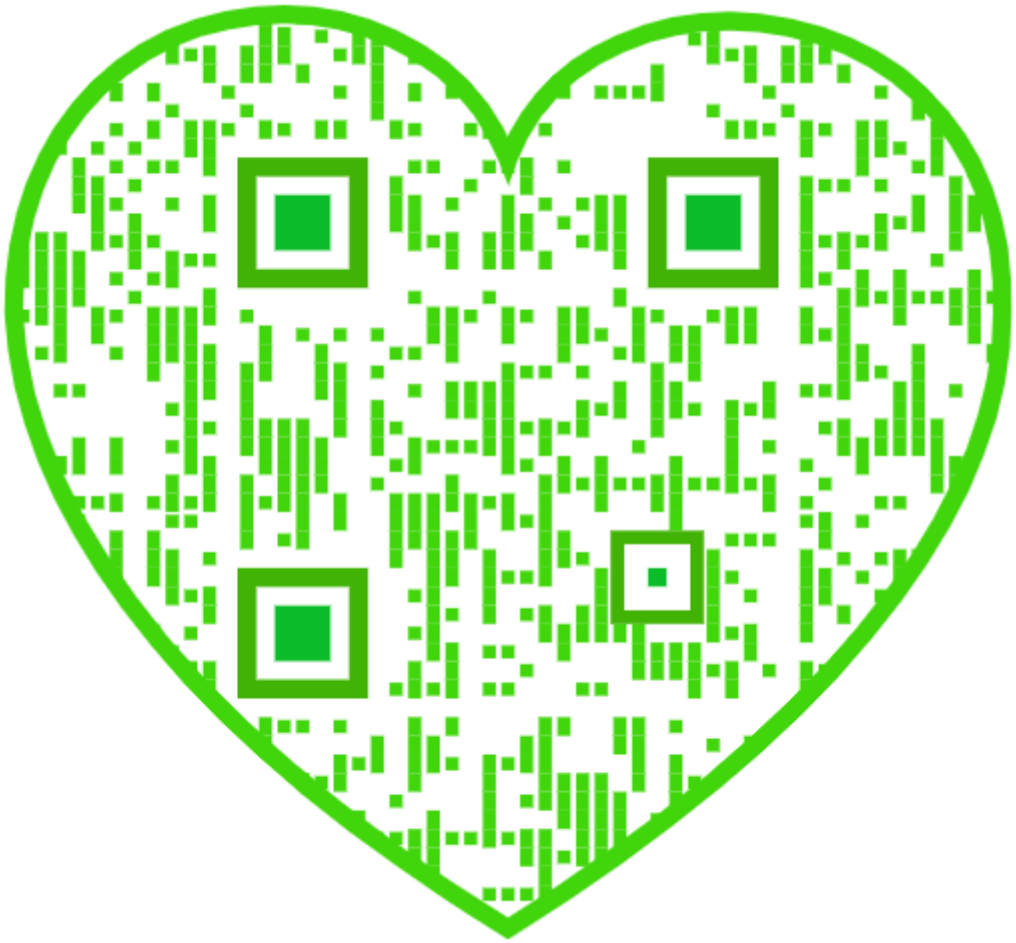
COMMON SENSE VETERINARY GUIDE

GORDON



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DISEASES AND TREATMENT

OF THE

HORSE, COW AND HOG

Diseases and Treatment

OF THE

Horse, Cow and Hog

BY
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WINAMAC, IND.

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TO THE GENERAL PUBLIC.

THE purpose of this book is to teach in a plain and practical manner, those things which are of greatest importance to the breeder, stockman and farmer, that is of keeping his stock in perfect condition, and the treatment of their diseases. For the preparation of this work, the author has taken great care to present nothing which has not for its basis well determined scientific facts. An earnest effort has been made to present these facts in as limited a space as possible, and to use, wherever practicable, home as well as medical treatment. It is believed that every one interested in stock will find in this volume something of practical value. We will not consume more space in introducing this work, trusting that an examination will disclose sufficient interesting matter to command the reader's attention, and that the use of this work will enable it to accomplish a useful mission, that of preventing and curing sickness and disease.

PART I.

CHOKE

The causes of choking are feeding oats, wheat chaff, eating greedily, bolting the feed, eating apples or any foreign body that is not ground up or of the proper shape. It will either lodge in the opening of the throat or at the opening of the stomach.

Symptoms—These vary owing to the position of the object, if the object is lodged at the entrance of the throat, the animal shows great distress, hurried breathing, frequent coughs, excessive flow of saliva, sweating, trembling and often bloating. In the lower choke, the symptoms are not so sure. After the horse has taken a few swallows of food or water it is ejected through the nose or mouth. It will show some distress, cough, groan and nearly always bloat.

Treatment—If the object is at the entrance you should use some instrument to hold the mouth open to protect the hand, and while the operator trys to pull the object out you should have a helper to manipulate the throat and press upward. If the object cannot be removed through the mouth it should be pushed on down as far as possible and followed up with oil. If the object is near

the entrance of the stomach do not try to push it down with the hose or a buggy whip, but take your time and soak it down with oil. Do not use much at a time but use it often. There are more animals killed with a buggy whip and hose than with the choke proper.

COLIC

The disease of the horse which we most frequently find is termed colic. This disease has many remedies which are sure cures. But what does colic mean? This is applied to all of the organs of the abdominal cavity, which are accompanied by pain. If the horse has an overloaded stomach, internal hernia, locked bowel, cramp or any other disease of the liver or bladder, it is called colic. Let us divide colic into five different forms: First, spasmodic; second, flatulent; third, indigestion; fourth, impaction, and fifth, worm colic.

SPASMODIC OR CRAMP COLIC

This form of colic is produced by contraction or spasm of the small intestines. This is brought on by driving a horse in cold rains, putting a hot horse in cold drafts, by bad feeding, and large drinks of cold water. Unequal nerve supply is the cause of the cramp of the bowels. This is more common in the high-bred horse than in the heavy farm horse.

Symptoms—If you will watch it closely, it is no trouble to tell this form of colic. If the horse is eating, he may stop eating and look at his sides, stamp his feet. He will begin eating again but the pain soon begins again. He paws, lies down and rolls, begins to sweat and steam, tries to lie on his back, and tries to make water very often but makes very small quantity at a time. This may be mistaken for kidney trouble, but is just due to pain.

Treatment—If you are not prepared for this with a colic drench, you can give one-half pint of whiskey in warm water. Jamaica ginger is useful with a little soda in warm water or milk. Rectal injections of warm soap and water are useful. Use in a large syringe or with four or five feet of rubber hose and a funnel. The end of the insertion should be well greased and run into the rectum from twelve to eighteen inches. A very good spasmodic colic drench to keep on hand is: Sulphuric ether, two ounces; opium, one ounce; ginger, one ounce, and warm water, one pint. Give four tablespoonfuls every thirty minutes until relieved.

FLATULENCE OR BLOAT COLIC

The most frequent cause of this form of colic is the changing of feed—new hay or grain, large quantity of green feed, feed that has lain in the

manger and soured—bad teeth or horse going without feed for a long time and then having access to too much feed.

Symptoms—This form of colic does not come as fast as spasmodic. At first the horse may lie down or may not, the horse becomes dull, the pain is continuous from the start, the belly becomes enlarged, and by striking in front of the haunches a drum-like sound is heard. If not soon relieved it will begin to breathe hard, eyes become blood-shot, loud heart beat, profuse sweating, trembling of the front legs, staggering from side to side and finally drops dead. The most prominent symptom is the bloating.

Treatment—This must commence in time to keep down any inflammation or to prevent rupture. Give two tablespoonfuls of soda, one-half pint of whiskey or dilute alcohol, and water one-half pint. Charcoal is very beneficial. Always give a physic as soon as possible. Raw linseed oil and four tablespoonfuls of turpentine, or one ounce of powdered aloes for a physic. Hot applications to the abdomen are always of great help.

IMPACTION

This disease is most always found in the winter when the stock is on dry feed. It is caused by feeding an over-amount of old, dry, hard hay or

corn stalks, shredded fodder, deficiency of the intestinal secretions, lack of water and want of exercise.

Symptoms—Impaction is diagnosed by slight abdominal pains which may disappear for a day or two to reappear in more violent pain. The feces are passed very often but very dry. The animal paws, lies down, stretches out on his side, and lies with feet extended; when it gets up it always sits up like a dog. He makes water very often which is due to the pressure against the bladder. A horse may suffer from an impacted bowel for a week and sometimes longer and eventually recover, but as a rule death comes in from twenty-four to forty-eight hours.

Treatment—This consists in an effort to move the bowels and to keep down inflammation. Give large physic as soon as possible; either of the following is advisable: One quart raw linseed oil and turpentine five tablespoonfuls, or Barbadoes aloes, one ounce; calomel, two drams, and powdered nux vomica, 1 dram. Always give full doses, as they are better than small ones given often. It takes any kind of a physic twenty-four hours to work so do not repeat under that time. Give all the water it will drink. Rectal injections and light exercise are very beneficial. If this treatment is carried out from the start most cases will recover.

INDIGESTION

The principal cause of indigestion is bad feeding, anything irritating, imperfect, unripe, damaged food, sudden changes in feed, and worms, are very good causes. Working the horse too hard, lack of care and poor feeding are weakening on the digestive organs and bring about indigestion. In the foals it generally starts from the dam.

Symptoms—Indigestion starts with an irregular appetite. At times the animal refuses all its feed and at others it eats ravenously. The appetite is not only irregular but is often depraved. There is a disposition on the part of the horse to eat unusual substances, such as wood, soiled bedding or even its own feces. One day the bowels are loose and the next day they are tight. Grain is often passed whole and the hay comes in balls not digested at all. The animal loses flesh and the hide becomes tight. Then come the colicky pains and if these are let run, inflammation sets in and death follows.

Treatment—One should begin with the feeding—its quality, quantity and time of feeding; examine the water fully, and always see that the animal has water before feed. Examine the teeth and locate the seat of the trouble. If worms are the cause of the trouble they should be removed by the proper treatment, as seen elsewhere. If

colicky pains begin, give the following: Baking soda, powdered ginger and gentian equal parts. Give two tablespoonfuls in warm water every thirty minutes until relieved. The following is a good indigestion tonic: Glauber salts, two pounds; common salt, one pound; baking soda, one-half pound. Give one tablespoonful in each feed.

WORM COLIC

There are many parasites that reside in the intestinal tract of the horse. There is the tapeworm, which is easily recognized if once seen. It is long, round and flat jointed and often from twenty to thirty feet in length. The intestinal worms are most commonly seen and are white or reddish in color and from four to twelve inches in length. They infest the small intestines. The small round worms infest the rectum.

Symptoms—If the infestation is great we may have colicky pains or there may be only switching of the tail or rubbing of the rump against the stall or passing manure often. The animal is in poor condition, does not shed his coat, pot-bellied, the appetite is poor, eats dirt, craves salt, or constipation or diarrhœa may be noticed. We may find white spots on the anus, but the best and surest way is to see the worms.

Treatment—Treatment is much more successful after a long fast and the worm medicine,

followed by a physic. The best worm medicine is: Turpentine, santonin, tartar emetic, creolin, and infusions of tobacco. For tape worms give areca nut, male fern, or pumpkin seeds. If the horse is troubled with round worms, give one ounce of turpentine in two or three ounces of raw linseed oil, two or three times daily, and follow the fourth day with a physic. If the horse has rectal worms give injections of tobacco for a few days and follow the fourth day with a physic.

INFLAMMATION OF THE LIVER OR HEPATITIS

The symptoms are dullness, constipation and clay-colored dung balls, scanty and highly colored urine, and internal pain in general. If examined closely he is swollen on the right side over the last ribs and he always lies on his left side and turns his head back to his right side. Lameness in front and of the right leg mainly. At the end he staggers and reels and falls backward and dies in one of these fits.

Causes—The most general cause is over-feeding in hot weather with little exercise. The mechanical causes are worms in the liver, injuries to the right side over the liver, foreign

bodies that have entered the stomach and passed into the liver and sometimes it comes from in-inflammation of some adjoining part inside.

Treatment—First a good physic that will work on the liver—aloes is preferable. Blood-letting is advisable if the animal is strong enough, four or five quarts out of the jugular vein. Tablespoonful of Glaubers salts in bran mashes or some soft food. If recovery takes place be careful and give plenty of exercise for some time.

BLOODY URINE OR HEMATURIA

In the horse bloody urine is usually the result of direct mechanical injuries, sprains, or fractures of the loins, or irritation caused by stone in the kidney, ureter, bladder or urethra. It may occur with acute congestion of the kidneys or diseased growth in the bladder. The urine may be streaked with blood or it may appear in small clots. If the cause comes from the kidneys it will be mixed with the urine and if it is from the bladder it will come in clots.

Treatment—The disease being due to direct injury, treatment will consist in removing the cause whenever possible and then apply styptics. Irritants in the food must be avoided, sprains treated according to the condition and stone in the bladder or urethra removed. Give mucilaginous drinks, as slippery elm or linseed tea, and

some of the following styptics: Tincture of chloride of iron in three-dram doses or oil of turpentine in one-ounce doses. If the discharge is great apply cold water to the loins and keep the animal perfectly quiet.

AZOTURIA

This disease is known by many different names —Azoturia, Bloody Urine, Black Water, Monday Morning Disease, Kidney Trouble and Hemoglobinuria. This disease can be kept off by proper feeding as the cause comes from standing in the stable eating rich feed and no exercise. It never occurs when the animal is at pasture or at daily work. The poisoning is not present when the animal leaves the stable, but starts after it has gone the first hundred yards or half-mile. It seems that the veins are full of rich blood and the kidneys cannot carry off the poison fast enough. Mares are more subject to this disease than geldings because they are more excitable.

Symptoms—In mild forms the animal may appear to just be lame in one hind limb. In severe forms the animal leaves the stable playing, but before it has gone many paces it begins to sweat, get stiff behind and seems to have lost all life. It will tremble, heave in the flanks, dilate its nostrils, breathe hard, the muscles in the region of the loin become rigid, he soon becomes crouched

behind and soon goes down, not able to hold up his weight on the hind limbs. When the animal is down it is continually in a jerk, the eyes become red and if the urine is passed or drawn it is dark brown, red or black. It may end fatally in a few hours or recovery will begin at once. If the animal lies long he may have a paralysis of the hind limbs which may last for months.

Prevention—The animal when at rest should have its ration cut down almost half, and should have some daily exercise, and above all, keep its bowels in good condition.

Treatment—In mild cases the animal should have good laxative such as raw linseed oil in pint doses with two tablespoonfuls of turpentine to the pint. When the animal starts to get stiff it should be stopped at once. Don't try to move it to a barn until all the stiffness leaves. In severe cases always give a good physic such as raw oil or aloes in six-dram doses. Draw the water and keep the animal perfectly quiet and warm. Use hot applications across the region of the kidneys and give one ounce of saltpetre three times daily and repeat your physic every two days until the animal is ready for work. After your hot applications bathe the rigid muscles with a stimulating liniment, as equal parts of aqua ammonia and sweet oil. When the patient is down, do plenty of rubbing and moving of the legs.

ACUTE INFLAMMATION OF THE KIDNEYS OR ACUTE NEPHRITIS

Inflammation of the kidneys may be divided into two forms—acute and chronic.

Causes—The causes of this disease are varied. Congestion occurs from the bad products passed through these organs during the recovery from inflammation of other organs and during fever, diseases of the bladder preventing the escape of urine from the kidneys and causing fullness will cause inflammation. The bacteria passing upward from the bladder to the kidneys is another cause. The eating of irritant food, the absorption of blisters placed over the kidney, and administration of medicine, the presence of stones in the kidney and infliction of blows or sprains over the loins may produce inflammation.

Symptoms—More or less fever, stiffness of the back, straddling gait in the hind limbs, difficulty in lying down and getting up, arching of the loins, looking back at the abdomen as if in colicky pains, and tenderness of the loins to pinching. The urine is passed often and is sometimes streaked with blood or even pus. The legs swell from the foot up and sometimes swelling is seen under the abdomen.

Treatment—If the cause can be found, remove it first. Let the bowels do the work of the kid-

neys by giving a physic of castor oil, as this physic will act less on the kidneys. There can be from four to five quarts of blood drawn if the animal is not weak or has no fever. The pain may be stopped by giving dram doses of bromide of potassium. Use boiled flaxseed in the drinking water and hot towels over the region of the loins. When the action of the bowels is started they may be kept moving by giving four to five ounces of Glaubers salts each day.

CHRONIC INFLAMMATION OF THE KIDNEYS

This will start the same as the acute, but cannot be stopped so easily. It may start from blows, injuries, or it will be connected with faulty conditions of the system, as indigestion, heart disease, or imperfect blood formation. It is rather an attendant on some constitutional disease than in a simple local injury.

Symptoms—The symptoms may include stiffness, weakness, sensibility over the loins, and modified secretion of the urine. Dropsy, swollen legs, scurvy, unthrifty skin, inability to stand work, poor or irregular appetite, loss of fat or flesh, and often skin eruptions of various kinds.

Treatment—This is not always satisfactory as the cause may be in some other part of the system. If any disorder can be detected it should

be treated first. Give tonics first. Give the following: Phosphate of iron, two drams; nux vomica, twenty grains; powdered gentian root, four drams. Give this amount daily. If there are any of the acute symptoms such as tenderness of the loins use the same treatment as in the acute form. Always clothe according to the season and have plenty of fresh air.

EVERSION OF THE BLADDER.

This can only occur in the female. It consists in the turning of the organ outside in through the channel of the urethra so that it appears as a pear-shaped mass hanging from the floor of the vulva and protruding externally through the lips. It varies in size from that of your fist to that of a baby's head. The urine may ooze out around it drop by drop. This condition comes from a bad condition of the bladder, the result of paralysis, over-distention or from difficult parturition. To replace this it should be washed with a solution of one ounce of laudanum and a teaspoonful of carbolic acid to a quart of warm water and returned with the hand if possible; if not, it should be wound tight with a two-inch bandage so as to diminish the large bulky mass and then pushed back with some rounded object. After it is returned the straining can be kept in check by giving laudanum in one or two-ounce

doses or by applying a truss of some kind to press on the lips of the vulva. The animal should be placed with the front feet a few inches lower than the hind ones.

DISCHARGE OF URINE BY THE NAVEL OR PERSISTENT URACHUS

This occurs only in the new-born and is the nonclosure of the natural channel through which the urine is discharged into the outer bag in fetal life. At birth this channel is supposed to close and the urine take its natural course. Imperfect closure is more frequent in the male than in the female. In the female the water passes in a few drops and in the male it flows in a stream. The first thing is to pass a human catheter and see that everything is open and then take a waxed thread carried through the tissues with a needle and tie it around the navel cord so as to envelop as little of the skin as possible. If a long navel cord is present you can tie around it. It is important to tie as soon as possible to prevent inflammation of the navel from the contact of the urine. In the summer a little carbolic acid water or tar water should be used to keep off the flies.

TUMOR IN THE NOSTRILS

A small tumor is often found in the false nostril which rises and falls when the horse is exerted. This tumor contains matter or a cheesy pus.

Treatment—If the tumor is well opened and the matter squeezed out nature will perform a cure. The opening should be made on the inside. Get the animal quiet and if necessary put a twitch on the ear or lower jaw, run one finger against the tumor and open with the opposite hand. Make the opening large enough to allow all the pus to escape. Do not be alarmed if you get a little blood for it will stop in due time. Squeeze the pus out and keep the wound clean.

COLD IN THE HEAD OR NASAL CATARRH

In nasal catarrh the inflammation may extend from the membrane lining of the nose to the throat and eyes. The causes are general and it almost always appears in young animals.

Symptoms—At the beginning the membranes are dry, congested and of a pinkish red color. Soon a watery discharge makes its appearance from the eyes and nostrils, the animal has some fever, is dull, sneezes and snorts. He expels the air through the nostrils the same as if he was blowing his nose. A few days after the attack begins the discharge changes to thick yellowish pus. Often the appetite is lost and the animal becomes debilitated.

Treatment—This disease is not serious if taken care of, but bad treatment or neglect may lead to

some other disease or cause this to become chronic. A few days' rest with pure air and good food is generally better than medicine. Steaming is very beneficial. Put a little dry hay in a large wooden bucket with one ounce oil of turpentine and two ounces oil of tar and pour over this boiling water and let the animal inhale the steam, very slowly at first, but after he has taken it awhile you can cover his head and let him have all that he can get. This can be repeated three or four times daily if necessary. Keep the bowels in good shape, and attention should be paid to the diet—bran mashes, scalded oats, linseed gruel or grass, if in season. If the horse will not eat this let him have any kind of food rather than keep him on short rations. This is all that is needed in mild cases, but if it continues to get worse, give four-ounce solution of acetate of ammonia and three drams of powdered chlorate of potassium in a pint of warm water three times daily as a drench. Be careful in drenching an animal with sore throat; do not hit his throat to make him swallow, but take your time and do it right.

SORE THROAT OR LARYNGITIS

The larynx is situated in the space between the lower jawbones just back of the root of the tongue. Posteriorly it opens into and is continuous with the windpipe. It dilates and con-

tracts to a certain extent and regulates the amount of air passing through it. The mucous membrane lining it is so highly sensitive that if the smallest particle of food happens to drop into it from the pharynx the animal will cough violently until the source of irritation has left. The larynx is a provision of nature to prevent foreign substances from getting into the lungs. Inflammation of the larynx is always known as sore throat and is caused principally by chilling and exposure.

Symptoms—The first symptoms will be coughing followed by difficulty in swallowing, which is due to the soreness of the membranes which may cause much pain. In many cases it becomes so sore that the food and water is returned through the nose. The head is more or less poked out and the glands between the lower jawbones and below the ears may be swollen. The membrane in the nose becomes red and a discharge from the nostrils soon appears. Pressure on the throat will cause coughing. As the disease advances the breathing becomes noisy and a harsh snore is heard with every respiration. The breathing becomes hurried and sometimes the animal is threatened with suffocation.

Treatment—Steam the nostrils with tar and turpentine and cause as much of the steam to be inhaled as possible. Place the animal in comfortable quarters, clothe according to the weather,

bandage the legs, and keep plenty of fresh air. The diet should consist of soft food as, bran mashes, scalded oats, linseed gruel and best of all grass, if in season. The place to eat should always be about the same height that the animal holds its head. If the glands are swollen they should be bathed with the following liniment: Two ounces olive oil, one ounce each of solution of ammonia and tincture of cantharides, and four ounces of water. Bathe twice daily. If necessary you can blister the swollen parts and as soon as it is drawn to a head it must be opened and treated the same as any abscess. The best internal treatment is: Three ounces vaseline, one ounce oil of tar, one dram tincture of aconite, three drams of sulphur; mix and put a tablespoonful well back on the tongue after each feed. In bad cases, where suffocation is near, you should have some competent surgeon to put a tube in the windpipe.

CONGESTION OF THE LUNGS

Congestion is an excess amount of blood in the blood vessels that lead to the lungs. Congestion of the lungs in the horse, when it exists as a disease of itself, is generally or always caused by over exertion, when the animal is not in fit condition to undergo it. In most cases what is recognized as congestion is nothing more than

exhaustion. The animal should always be put in condition before hard work is started. If a horse is kept in the stable for the purpose of putting on flesh and then taken out and given a hard drive, he may start off in high spirits, but soon become exhausted, and if pushed will slacken his pace, show a desire to stop, stagger and even fall. On examination the nostrils are dilated, the flanks heaving, the countenance haggard and has the appearance of suffocation. The heart is not accustomed to the severe strain put on it and it becomes unable to care for the blood which is accumulated in the lungs and brings on congestion. The animal may return to the stable without any alarming symptoms, but as soon as it is placed in the stall it will stand with its head down, legs spread out, the eyes wildly staring or dull and sunken, the breathing very rapid, the body is covered with sweat which soon evaporates and leaves the surface of the body, the legs and ears cold. This disease is very often followed by more serious ones.

Treatment—If the animal is attacked with this disease on the road, do not attempt to return to the stable, but stop no matter where you are. If he is in the stable you must supply him with an unlimited amount of fresh air. If the weather is warm put him out of doors, keep him perfectly quiet for he has all he can do to get his breath.

Rub the body well and keep up all the circulation possible and give one-half pint of whiskey in warm milk every hour. If this is not at hand give two oz. turpentine in a pint of warm milk, but do not repeat. Two oz. each of nitrous ether and alcohol in a pint of water is the most helpful medicine. When the animal is in shape for use again he should be put in condition before hard work.

HEAVES OR ASTHMA

There is a great difference among horsemen and veterinaries in regard to heaves. There are many causes for this disease, such as feeding of dusty hay, bad straw or moldy feed of any kind and keeping the horse in a dusty place. Horses brought from a high to a low level are predisposed. This disease affects the digestive tract and the lungs.

As for a cure there is none. All that can be done is to feed damp feed and keep the animal able for work. Fowler's solution of arsenic given in the feed twice daily is very beneficial. The heaves can be shut down for a while and the animal will appear well for a while, but this is injurious to the animal, and we will not prescribe for this.

BLEEDING FROM THE LUNGS OR HEMOPTYSIS

An accident or over-exertion may rupture a blood vessel of the lungs and cause bleeding, but

it generally follows pneumonia, influenza, bronchitis or congestion of the lungs. Pneumonia may follow a ruptured blood vessel or the blood may fill up the bronchial tubes and cause suffocation. When bleeding comes from the lungs it is accompanied by coughing, the blood is frothy, bright red in color and comes from both nostrils. If the bleeding is from the lungs a gurgling or rattling sound can be heard by placing the ear over the windpipe. When this comes in connection with other diseases it needs but little attention. When it comes from other causes the animal should be kept quiet and given one dram of acetate of lead dissolved in one pint of warm water, or you can give one ounce of tincture of perchloride of iron in water in place of the lead. Hemorrhage of the lungs may occur and cause death without the least sign of the discharge of blood from the nostrils.

THUMPS
OR SPASM OF THE DIAPHRAGM

Thumps are often mistaken for palpitation of the heart and they must not be looked upon as the same. Thumps in the animal are the same or similar to hiccoughs in man. If this is watched closely there should be no trouble in distinguishing this from palpitation of the heart. The jerky motion affects the whole body in thumps.

If one hand is placed over the heart and the other over the last ribs you will find the same jerk both places and the heart action will be weaker than normal.

Treatment—The treatment should be similar to that of congestion of the lungs. Antispasmodics, such as one ounce of sulphuric ether in warm water or three drams of asafetida in warm milk.

DISTEMPER OR STRANGLES

This is an infectious disease of the horse and is most frequently seen in young animals and one attack usually protects the animal from any future trouble of this kind. It begins as a fever and usually in a few days it forms an abscess in some portion of the air passages and often in other parts of the body.

Causes—It generally comes from the animal coming in direct contact with a sick horse or being where there has been a sick one. An animal very seldom has this disease after it is past the age of six. The most common way of the horse getting this disease is to take a young horse from the country to a city and leave him in some public hitching place. It is usually from two to four days after exposure before the animal takes the disease.

Symptoms—At first the animal becomes slug-

gish, goes off its feed, is very thirsty, eyes water, has a light cough which becomes more severe as the disease advances. In a few days there is a watery discharge from the nostrils which soon becomes more thick and sticky and finally forms a yellowish pus. Soon after the discharge is seen, a swelling comes under the jaw, which is very hot at first but after treatment there is pus formed and if not opened it will finally break. After the pus is well formed the fever generally leaves. Old horses might have this disease, but it is always in a light form. If this disease is not taken care of there is much danger of complications.

Treatment—The ordinary case of distemper needs but little treatment outside of soft feed and protection from bad weather. If the animal has much fever give quinine in dram doses and keep the bowels loose. Steaming the head with tar and turpentine in a bucket of hay and hot water, cleanses the head and eases the cough. The swelling of the glands should be poulticed but not blistered. As soon as the swellings become soft they should be opened. For prevention and cure of light cases give the distemper prescription, given in the back of this book.

INFLUENZA

Influenza is a contagious and infectious fever that affects the horse, ass, and mule. After the

animal has one attack it usually protects it from any further trouble, but it is possible for it to have a second one. This is more common in the young horse that is taken from the farm into the cities, especially those that go through the stock-yards or those that are shipped in a dirty stock car. After this disease starts through a stable, where there are more horses, as a rule every horse will have it.

Symptoms—After a well horse is exposed to this disease it usually takes from three to seven days for the symptoms to develop. This may run a simple course and the animal may never go off his feed, or it may develop in the fever form from the beginning. The first noticeable symptoms are high fever, chills of part or all of the body, the patient pays no attention to any noise, the body temperature runs from 103 to 107 F., the hair becomes dry and rough, the breathing becomes hard, and patient has a very staggering gait when he is made to move. We may have complications with this disease such as complications of the intestines, lungs, brain, pleura, and of the heart. Influenza is never very serious only when we have complications.

Treatment—If the appetite remains good, give a moderate quantity of sound feed, and always grass, if in season. The patient should be placed in a well ventilated box stall, away from all other

stock. Give cold water injections to reduce the temperature. If he becomes cold rub him well with some weak liniment and put on a heavy blanket. Give quinine in one-dram doses three times daily. In case of weak heart give digitalis. When recovery has begun and the animal is very weak give one-half pint of whiskey or brandy three times daily. Always use our distemper powder all through the disease.

ABORTION

Abortion is the expulsion of the impregnated ovum at any time after the impregnation, before the foal can live out of the womb. If the foal is advanced enough to live it is premature parturition or birth and may occur as early as the tenth month or three-hundredth day.

The mare may abort from many causes, such as inflammation of the internal organs (bowels, kidneys, bladder or lungs), diarrhœa, constipation, bad food, indigestion, blows to the abdomen, rapid riding or driving, shipping, bleeding, traveling or pulling on muddy roads, slipping or falling, eating rye, frosted foods, bad water, and bad condition of the dam.

The symptoms vary according to the time of the abortion, if it occurs as early as the first month, there is but very little change only that the mare comes in heat. If it occurs later there will

be more general disturbances and the process will resemble normal parturition. There will be straining and swelling of the vulva with mucous or bloody discharge, the abdomen drops, the flanks fall in, the udder fills, the mare becomes restless, paws, looks at her sides, switches her tail, moves around uneasily, lies down, gets up and as in natural foaling, she will expel some mucus and blood and then the water and finally the fœtus. This may take up some time. If the fœtus is not coming right, it will have to be straightened, the same as in difficult foaling. Abortion may be followed by flooding, retention of the afterbirth, and whites. The most important part is to notice this as soon as possible and prevent it by removing the cause, if possible.

Treatment—Should be preventive if possible. Always avoid diarrhœa, constipation, indigestion, painful operations and slippery roads. When abortion is near at hand the mare should be placed in a dark roomy box stall and the straining stopped as soon as possible by giving some sedative. Laudanum is usually given in from one to two-ounce doses, according to the size of the patient, and repeated in from four to five hours, if necessary. When everything fails and miscarriage proceeds, all you can do is to assist in removing the foal and its afterbirth. In bad cases it is necessary to use antiseptic injections

into the womb to prevent any form of poisoning. This is less frequent in the mare than in the cow. After abortion there should be a general cleaning with antiseptics which will prevent it from becoming contagious among your stock.

AVERSION OF THE WOMB

When the womb fails to contract after difficult parturition, the after-pains will sometimes cause the womb to evert back through the vagina until the whole organ appears externally and hangs down on the thighs. When the womb is returned it is most easily done in a standing position. The womb should be washed clean and some kind of a clean sheet placed over it to prevent any foreign bodies from going back with it. You should have an attendant to hold it up while you begin to put it back at the loose part next to the vagina. There is no danger as long as you do not rupture the delicate covering of it. After it is well in it should be carefully moved backward and down until it drops back to its place. There can be three or four stitches taken in the vulva or you can use some form of a truss made out of two ropes which will help keep the animal from expelling the organ. If the straining keeps up, you can give opium in dram doses in warm water or chloral hydrate in ounce doses in one-half pint of warm water.

SUN STROKE OR HEAT STROKE

This term does not only apply to the direct rays of the sun, but exhaustion produced by violent work in hot weather, such as racing, or the use of draft horses in the heat without the proper care, and water.

Symptoms—Sunstroke comes on suddenly. The animal stops, drops its head, begins to stagger and soon falls unconscious. The pulse is very slow and irregular, sweat breaks out in patches and the temperature sometimes runs as high as 109 degrees F. If this is not treated at once, the animal will die without regaining consciousness. Heat exhaustion comes on more slowly. The animal seems tired and has to be urged along. The sweat checks, the gait is awkward, he pants, the eyes are bloodshot and he soon falls. It takes some time for recovery, if it is treated successfully.

Treatment—In both forms, use cold water or ice packs on the head and spine and spray the body all over with cold water. Give half-pint of whiskey in warm milk and repeat every hour with half this much until the temperature is down and the pulse slower and stronger. Give tonics while the animal is recovering, as sulphate of iron, one ounce; powdered ginger, two ounces; powdered gentian, two ounces, and ground flax-

seed meal to make one-half pound. Give tablespoonful in each feed.

FORAGE POISONING OR CEREBROSPINAL MENINGITIS

This comes in all localities and consists in a poisoning from the food or water. It comes from bad ensilage, bad corn, brewer's grain, bad oats, pond water, and the most important one is from the grass. Horses and mules of all ages are subject to this disease.

Symptoms—From the first the animal has a staggering gait, weak, hard for it to swallow, bad eyesight, twitching of the muscles and severe lameness behind, especially in grass poisoning In fatal cases, the whole body becomes paralyzed, and the animal becomes delirious. Death usually comes in these cases in from twenty-four to thirty-six hours.

Treatment—In the worst cases the treatment is of but little benefit. If the animal is able to swallow, give six ounces of whiskey in a pint of warm milk. If he is delirious, let him smell of weakened aqua ammonia. In the lighter cases the animal should be given a heavy physic followed with two grains of strychnine twice daily. When the patient begins to eat let him have any kind of food he can eat. Any kind of nourishment he will take and plenty of fresh

water. Keep him in a good clean place with plenty of fresh air.

RUPTURE OF AN ARTERY

If a large artery is ruptured, it does not take long for death to follow. Rupture may be produced by mechanical violence or accidentally.

Symptoms—In fatal cases where there is much bleeding the animal becomes weak, the breathing hurried, eyes dilated, staggering in gait, fainting and then death. When there is a limited amount of hemorrhage, it may not be noticeable, but if it is near the surface of the body it will form a swelling or a bunch similar to a tumor.

Treatment—If the artery is on the outside it should be tied or wrapped tight with a bandage. When the artery is deep-seated you should give large doses of ergot or tannin to contract the blood vessels. Give the animal as much cold water as possible and plenty of nourishing food.

TORN EYELIDS

The eyelids are torn by getting caught on nails, racks or mangers, on fences, hame hooks, or other parts of the harness.

Treatment—It should begin as soon as possible, the edges should have all hair trimmed off and washed thoroughly before it is sewed.

Twitch the animal and it can be sewed as well as any other part of the body. Be sure and get the edges even and the stitches pulled tight. After it is sewed it should be washed twice daily with a carbolic acid solution.

SPLINT

The splint is a bony growth found on the cannon bone, between the knee or hock and fetlock joint. They are most commonly found on the inside of the leg, but exceptionally found on the outside. They vary in size, ranging from that of a large nut to that of a small one. In searching for them they are very readily felt by running the hand down the leg.

Symptoms—A splint may frequently be the cause of lameness, but not always. If this is the case, it is very easily detected as the animal throws the leg out when it trots.

Cause—The most common causes are from hurts, licks from the opposite foot or bruises of any kind. Another common cause is the using of the animal at hard work, while it is too young, or hard pulling when it is not able for it.

Treatment—A splint will very often leave without any treatment. The first advisable treatment is the bathing of the leg with tincture of iodine. If it does not respond to this, use cantharides or biniodide mercury blister. If this is

without success take the animal to some competent veterinary and have it fired.

RINGBONE

A ringbone is a bony growth which extends around, or partly around, the coronary band or top of the hoof. Owing to the location it is divided into three classes: high, middle, and low. The high and middle hardly ever extend around the foot.

Cause—As with splints, it may result from severe labor in early life, or caused from bruises, blows, sprains, injuries to the tendons, ligaments, or joints. It may be caused by disease of the foot or may be hereditary.

Symptoms—A horse may come out of the stable very lame, but after it has been used a short time it goes sound. The size of the ringbone does not determine the amount of lameness, for the smallest ringbone sometimes causes the lamest horse.

Treatment—The preventive treatment consists in keeping the colt's feet well trimmed and properly balanced.

As long as there is inflammation a sharp blister of cantharides or biniodide of mercury will do good if the animal is allowed to rest for four or five weeks. If this is not a satisfactory treatment the firing iron must be resorted to.

SIDEBONES

A sidebone consists in the hardening of the lateral cartilages found on the wings of the coffin bone. Sidebones are most always found on the front feet, but occasionally on the back ones. They are of little importance on the hind ones. A sidebone causes no lameness, only when it interferes with the action of the joint.

Cause—Sidebones often come on heavy horses without any apparent injury. Blows or other injuries to the cartilage may set up an inflammation and terminate in these bony growths. They are often seen in connection with contracted heels, ringbones, punctured wounds of the foot, quarter cracks, and sometimes follow founder.

Symptoms—In the earlier stages of the disease, if inflammation is present, the only evidence of the trouble to be detected is a litle fever over the seat of the affected cartilage and a slight lameness. In the lameness of sidebones the toe of the foot strikes the ground and the step is shorter than normal. The animal comes out of the stable stiff, but is more free after exercise.

Treatment—As soon as the disease can be detected, cold water bandages are to be used for a few days, to relieve the fever and soreness. This should be followed with a good blister. If this does not stop the lameness the firing iron must be resorted to.

SPAVIN

This affection is a bony growth of the hock joint. It is generally located on the interior of the joint, but it is possible for it to be on the outside. The hock may be spavined and all of the outward appearances may be normal. This is termed a blind spavin, or jack. In the horse world, a spavin and jack are termed the same.

Causes—There are many, of which I will mention a few: sprain, violent efforts in jumping, galloping or trotting under the whip or spur, exertion of starting a heavy load, a misstep, slipping on an icy surface, slipping with worn shoes on a bad pavement, or it may be hereditary.

Symptoms—The main symptom is the position while standing. The leg is carried inward and the heel of the shoe rests on the toe of the opposite foot. Some horses show the lameness more when they first start, while others show it more after they have been driven some distance. If the hock is examined closely, there is generally some sign of fever at the point of affection. One of the main ways to discover it is to stand off some distance and watch the animal move—any close observer will notice the peculiar action of the affected hock joint.

Treatment—Always beware of fake advertisers. Put the animal at rest at least for a month and longer if possible. Any good blister or lini-

ment that will lower the tension of the blood vessels is advisable. Cantharides is my favorite blister for bony growths. Use this blister every second day until you have a heavy blister. As in other bony growths, if it will not yield to the blister, the firing iron will have to be used by some competent veterinary.

SPAVIN BOG—THOROPIN

Bog spavin, blood spavin, and thoropin, all come under the same heading. The bog spavin is a round, smooth, well defined tumor; is situated in front and a little inward of the hock. On pressure it disappears to reappear on the outside of the hock. The thoropin is found at the back and on the top of the hock in that part known as the hollows. It can be seen on both sides and just in front of what is known as the ham-string.

Treatment—Always rest, and strong liniments and blisters if necessary.

OPEN JOINTS, BROKEN KNEE, SYNOVITIS OR ARTHRITIS

The close relationship of these diseases and their connection in regard to origin, symptoms and treatment is my reason for taking them together.

Causes—These are many and general, of which I will mention a few: blows, bruises, kicks, falls,

lacerations, hurts in every form, overloading of draft horses, racing, stumbling, falling on the knees, pawing and hitting the knees against the manger, a blow received from a careless hostler, or a jab with a fork often ends in a broken knee or hock. Open joints generally start from a bruise or a scratch when there is no care taken of it until suppuration takes place.

Symptoms—Starts with a slight bruise or sprain. The swelling usually starts with a slight discharge, the tendons divide, the joints open and let out the joint water, the joint divides and we have a broken knee, then we have blood poison and death.

Treatment—In case of simple bruises, use simple remedies, such as warm fomentations or cold applications. When the skin is broken, use antiseptic dressings as those of the carbolic acid order. Where the joint water is escaping use collodion dressings. Improvement in those cases will be slow. After all discharge has ceased and the wound has healed a blister should be applied to prevent having a large bunch left. If necessary the patient can be placed in a swing.

SHOULDER LAMENESS

The shoulder is not very often the seat of lameness because it is very strong and has very large muscular attachments. *Slip of the shoulder* is

the common term applied to shoulder lameness.

Causes—A fall, starting of a heavy load, a slip on an icy road, the feet balling up with snow and collision with another horse or some solid object.

Symptoms—The most convincing symptom of shoulder lameness is *Sweeny* or the shrinking of the shoulder muscles. We may either have swelling or fever in the shoulder. The animal keeps the foot forward and is always unable to flex or extend it in backing and uses the opposite foot for a pivot in turning around.

Treatment—In all cases rest, and plenty of it; good strong liniments or applications of iodine, belladonna, or camphor, or hot or cold applications. Always, in case of Sweeny, use strong blisters with plenty of rubbing, and manipulating of the skin. The duration of the treatment must be governed by the effects.

CURB

A curb is the bulging backward of the posterior part of the hock, where in the normal state there should be a straight line, extending from the upper end of the joint of the hock down to the fetlock. The cause is a sprain or a bruise to the tendon which passes on the posterior part of the hock. Some horses have what we call a curby leg which is more subject to this than others.

Symptoms—A hock affected with curb will present more or less swelling with varying degrees of heat or soreness and may be accompanied by lameness. Some curbs do not cause lameness and others just cause it as the horse starts out after standing, but leaves it after walking a short distance. A curb is considered an unsoundness, but the after effect is not considered serious.

Treatment—The easy way to remove a curb is to begin when it begins forming. The best results are obtained from the constant use of ice poultices. But if it becomes chronic we have to resort to absorbents. Use a cantharides blister or do plenty of rubbing with iodine ointment. The absorbent blister given in the prescription list in the back of this book is very beneficial. If the lameness gets too severe we have to resort to the firing iron.

CAPPED ELBOW

Capped elbow or shoe boil is the term applied to an enlargement found at the point of the elbow.

Causes—The horse does not lie directly on the breastbone, but more on the side, with the front foot under him and the hoof or shoe in direct contact with the elbow which is often bruised and starts a shoe boil.

Symptoms—The joint at the elbow becomes swollen and tender and has much fever and pain

in it. It may or may not cause lamenesss. It may disappear in time or it may form a fluctuating tumor. This tumor will become soft and when tapped there will be an escape of blood, serum or pus. At times, after they are opened, they will heal up and not leave any trace while at others there will be a sack left. In some cases this sack will fill up and become very hard.

Treatment—When it is soft it should be opened and treated the same as a straight wound. If the recurring is the bad feature, we should look to the shoeing and shorten the inside of the front shoes. If it is bruised with the hoof it will have to be padded. In some cases the boil must be bathed with iodine or blistered very heavy. In case of hard formation the knife must be resorted to.

INTERFERING OR SPEEDY CUTS

Interfering is the term applied when the trouble is on the inside of the fetlock, either in front or behind. Speedy cuts is when the trouble is on the inside of the forelegs any place below the knees.

Symptoms—Sometimes the injury is so slight that the hair is just knocked off or the skin just broken. At others the pain is so severe that the animal carries the foot for some time. When the horse interferes just a little it is followed by

a more severe knock. It may cause the leg to swell and the foot may become very feverish, and in some cases the foot cannot be put to the ground.

Treatment—As in all slight bruises use hot applications and follow with any good stimulating liniment. In case of swelling use cold applications and tight bandages. In suppuration use ground flaxseed meal poultices. When an abscess has formed it should be very carefully opened and treated the same as a clean wound, until after it has healed and then it will leave a small callous place which must be removed with a blister. When there is no pus, but an enlargement, it should have a pin-pointed firing. Shoe according to the action of the animal.

STRINGHALT

This is an involuntary movement of one or both hind legs in which the foot is spasmodically lifted from the ground much higher than normally carried. This may just appear as the animal is taken from the stable and then leave. Sometimes it is most apparent as the animal trots, others at a walk and others as the animal turns around. The age of the animal has nothing to do with the disease. This is always considered an unsoundness.

Causes—Veterinaries are yet in doubt in re-

spect to the cause as well as to its essential nature. Whether it results from disease of the hock, bad formation, or shortening of the ligaments, a chronic inflammation of the siatic nerve, or a disease coming from the spine or whether it is purely a muscular lesion.

Treatment—When there is a cause the treatment should be directed toward this factor. When the trouble is in the hock or foot, treat these places alone, use treatment found for these particular diseases. If it remains after these local lesions have healed, or if you find no cause, the best results have followed the sectioning of the lateral exteriors of the foot. A competent veterinary should do this.

CONTRACTED HEELS OR HOOF BOUND

This consists in the shrinking of the tissue of the foot and occurs in dry stalls or on hard floors. This is more common in the forefeet, but is occasionally found in the hind ones. Usually but one foot is affected, but when both are diseased the contraction is greater in one than the other.

Causes—Horses that are raised on wet, marshy lands and then taken to cities and kept on dry floors are more subject than those raised in a dry country. Another common cause is in the shoeing, such as rasping the walls, cutting away

the frog, heels and bars, high calks and the use of nails too near the heels. Contracted heels may follow other diseases of the foot.

Symptoms—The foot loses its shape and the walls from the quarter back form a straight line. The foot becomes dry and so hard it can scarcely be cut, and the heels become rigid and scaly. When the disease becomes advanced lameness is present and stumbling is very common. When the animal leaves the stable he walks on his toe, but after exercise he goes sound. He always wears the toe of the shoe out first.

Treatment—Always use preventive measures, if possible, by using greasy hoof ointments. Do not use calks on the shoes unless it is absolutely necessary. When the horse is at steady work, he should be reshod once a month. A number of shoes are made for contracted heels and many are a success, if applied right. I always poultice the foot until it is soft and then use a common bar shoe with plenty of frog pressure and packed with oakum and tar or use a common plate shoe and cut in two at the toe and as the foot grows out it will spread. If there are complications treat them separately.

OVERREACH

This is when the shoe of the hind foot strikes or injures the heel or quarter of the front foot.

It generally occurs in fast horses. In trotters it occurs when the horse changes from a trot to a run.

Symptoms—The coronet or quarter is bruised or cut. In case the animal catches the shoe of the front foot and pulls it, it is known among horsemen as grabbing. Horses on the track that overreach are bad breakers as the injury keeps them excited.

Treatment—If the injury is slight use cold water bandages for a few days. If the parts are cut deep they should be poulticed for at least two days. If the animal is subject to overreaching he should not be driven fast without quarter boots. When the animal grabs, the heel of the front shoe should be shortened and the toe of the hind foot should project out over the shoe.

CALK WOUNDS

This generally occurs in heavy draft horses that are shod for heavy work. It is generally brought on by one horse stepping on the other. It most always happens on paved streets or on slippery roads and is more common in the fore-feet than in the hind ones.

Treatment—Preventive measures, if possible. Boots on the hind legs and blunt corks on the outside of the front shoes. In slight bruises or injuries use cold water applications and follow

with carbolized vaseline. In severe cases poultice with ground flaxseed meal and treat according to the condition after poulticing.

COCKED ANKLES OR KNUCKLING

Knuckling is a partial dislocation of the fetlock joint in which the relative position of the pastern bone to the cannon and coronet bones are changed. Knuckling is not always considered an unsoundness, but causes stumbling and fractures to the pasterns.

Causes—Young foals are subject to this condition, but in most cases it is only temporary. The cause of this is the foal laying with the legs flexed before birth. Horses with straight pasterns are more subject to this condition as they become old, especially in the hind limbs. Heavy work, hilly countries, fast and hard work on race tracks are more exciting causes for knuckling. Mules are more subject to this in the hind legs than the horse. Knuckling may also be produced from disease of the tendons and ligaments of the legs.

Treatment—In young foals the only treatment necessary is time. When knuckling has commenced in older horses the ligaments and tendons must be relieved by proper shoeing. The foot is to be prepared for the shoe by shortening the toe as much as possible and leave the heels high. If

the foot is prepared in the usual way it should be thin in front with thick heels or high calks. For the hind foot a long-heeled shoe with calks does best.

THRUSH

This is an excessive secretion of unhealthy matter from the frog. It is most always seen on the common draft horse and is generally due to the care of the animal instead of to the breed.

Causes—Filthy condition of the stable is the main cause. It is more common in the hind feet of the mare and in the front feet of the gelding. Muddy streets or roads and rough work on stony roads are good causes.

Symptoms—At first there is an excessive moisture in the frog, accompanied with an offensive smell. After a time the discharge begins, at first watery and then it becomes thicker and highly offensive and gradually the whole frog is eaten away.

Treatment—These are to be treated by cleanliness, the removal of the cause and a return of the frog to its normal condition. The foot should be poulticed for a day or two and then well pared out and if not in too bad a condition it should be dressed with powdered calomel and covered with a leather boot, for protection. If in the worst stage, always eat it out with butter of antimony.

CORNS

Corns are an injury to the sensitive horn of the foot where some of the small blood vessels are ruptured and a small amount of blood is allowed to escape. There are generally three classes of corns, the dry, the moist, and those that suppurate. The front feet are more subject to corns than the hind ones. Any breed of horses will have corns if the conditions necessary for the productions are present but the heavy horses that are worked hard on rough roads are most subject.

Causes—High-heeled shoes, weak feet, long feet, horses that are always shod, bad preparation of the foot for shoes, small stones, hard roads, dry earth and a high-knee actor is a good subject.

Symptoms—In most cases a corn will cause enough pain to produce lameness. Often old horses have what we term chronic corns. Apparently it does not lame the animal, but causes him to to be restless in the stable and to never lie down. In the suppurative corns, the lameness disappears as soon as the abscess breaks and the pus escapes. In the dry corns, when the patient is rested or the foot pared down the lameness will leave for the time being. When a corn is suspected, the foot should be hit with a hammer, which will always cause pain. In a suppurative corn the pus is found either by paring the foot

out or it will break out at the hair of the hoof.

Treatment—There are many cures or supposed to be cures for corns, but I will try to enumerate a few that have been a success for me. First, if you can find the cause, remove it. In most cases the shoeing is at fault. The best preventive is to keep the foot in good shape by using equal parts of raw linseed oil and Neat's foot oil. This keeps the foot soft and allows no cracking. Use this once or twice a week. If it is a dry corn the foot should be poulticed for a few days and then the corn should be pared out as much as possible but do not destroy the soft tissues. After paring it out, pour in equal parts of iodine and carbolic acid. If the animal must be worked, shoe him with a bar shoe and repeat the treatment every third day. In the soft corns I think the only cure is to cut them all out and dress the wound with tincture of aloes or spirits of camphor and pack well with oakum every two days until healing takes place. In the suppurative corns the foot must be well pared out so as to let the pus escape. If the pus has worked out through the top of the foot there must be drainage made back through the sole. Follow this with cold baths and apply a little sulphate of iron until the fistulous tracts become healthy. If the opening wants to close up use heavy poultices.

BRUISES OF THE FROG

A bruise of the frog is generally caused by stepping on some rough object such as a stone. A broad flat foot with a fleshy frog and low heel is most liable to this injury. This most always happens while the horse is trotting or running.

Symptoms—Lameness and suppuration around the frog are the most prominent symptoms. When the animal is at rest the foot is set forward with the toe on the ground and the leg flexed at the fetlock joint. As soon as the pus escapes the lameness disappears. In the severe cases the coffin bone becomes involved.

Treatment—If the lameness is noticed at once the foot should be placed in a cold bath to prevent suppuration. If suppuration has begun the horn of the frog and the bars should be cut away and the foot poulticed. When the pus loosens the remainder of the horn should be cut away. When all the impurities are sloughed away the foot should be dressed with any good stimulating dressing, such as tincture of aloes or spirits of turpentine and packed well with oakum. Redress the wound every second day.

FOUNDER OR LAMINITIS

Founder is a simple inflammation of the sensitive laminæ of the foot.

Causes—The main causes are overfeeding, too

much water when warm or overexerted, using young horses on hard streets, too much road or track work, and very often it follows foaling which we call colt founder.

Symptoms—Founder nearly always affects the front feet or may just affect one, and very seldom it affects all four. The first symptoms are lameness, the feet are hot, and the temperature rises, the animal shows much pain, the breathing is rapid and the nostrils dilated. The bowels are loose at first, but soon become impact. The urine is scanty, highly colored and the animal tries to pass it often.

Treatment—The treatment should always be preventive, if possible. The first thing should always be a physic of one quart of raw linseed oil, with two tablespoonfuls of turpentine. At first the feet should be put in hot water for an hour and then changed to cold water and left there until all the fever is gone. Give four ounces of saltpetre in one pint of warm water and repeat every six hours. Remove the shoes but do not pare the feet. Put the shoes back on as soon as possible.

INFLAMMATION OF THE HEEL, GREASE HEEL OR CANKER

This affection has an offensive discharge from the glands of the foot. At times the foot and heels are feverish, but in most cases there are

grape-like projections which give off a greasy discharge. After it has run for some time, the heel and frog become implicated and give off the same kind of pus. The cause would be the same as in any inflammation of the foot: filthy, dirty stables, mud left on the legs, following laminitis, or swollen legs, but mainly neglect.

Symptoms—The symptoms are according to whether it comes on suddenly or comes on slowly. If it comes on suddenly there will be swelling in the skin of the heels, with heat, tenderness, itching and stiffness which partially leaves after exercise. In the slow forms there is just a slight swelling after rest with very little heat or inflammation for a week or more. From either form there is a slight discharge, but not enough to give off the offensive odor. After the swelling increases, the hair begins to stand straight out and the discharge becomes grayish and milky and every time you go near the barn or animal you can smell that offensive odor. In some cases the grapes form and break open and in others the heels break open and give off the discharge. When the frog becomes affected this exudate is found all around the edges of it and when this is let run long and the foot is pared down the secretion is found all over the flat surface between the frog and the wall.

Treatment—The first thing is cleanliness, but

this will not establish a cure. Pure air, nourishing diet, liberal exercise, avoid mud and cold winds. At the beginning benzoated oxide of zinc may be used. A good dressing is vaseline one ounce, oxide of zinc two drams, iodized phenol twenty drops and turpentine ten drops. If the surface is swollen and tender use a flaxseed poultice and follow with the following lotion: Sugar of lead, one ounce; carbolic acid, two drams, and water, one quart. If the grapes are found, rub them with caustic, such as copperas, lunar caustic, or bluestone. If the frog is affected it must be pared out to the quick and dressed with dry caustic powders, as quicklime, copperas or bluestone, and changed each day.

SCRATCHES, CRACKED HEELS, CHAPS OF THE KNEE OR HOCK

This usually sets in with a swelling, heat, tenderness in the hollow of the heel, stiffness and lameness. Very soon the cracks appear and the skin becomes thick and rigid. Some of the causes are overfeeding of grain, close, hot, dirty stables, constant contact with manure and urine, working in deep, irritating mud, limestone districts, dust in dry weather on dirt roads, snow or freezing mud, clipping the heels and overwork in bad weather. As soon as this begins the legs commence to stock.

Treatment—First of all, remove the cause. If feeding corn, change to oats or bran mashes, and give a good physic. If the legs swell give exercise and plenty of hand rubbing. A good lotion to use for a wash after the heels begin to crack is: Four drams sugar of lead, ten drops carbolic acid to one quart of water. If the heels crack and become very hard use the following ointment: One ounce vaseline, one dram sugar of lead, one dram oxide of zinc, and ten drops of carbolic acid.

WARTS

These are a morbid overgrowth of the superficial layer of the skin. The small warts which come on colts are nothing serious and always leave just as quick as they come. If they do not leave, cord them with a silk cord. But the large warts or cancerous growths are fed by too large a blood vessel to cord and should be removed by using powdered arsenic.

Keep the scab rubbed off and dust the arsenic on every other day. The wart will begin to dry up and crack around the edges and then drop out in chunks. After it is all dropped out, the wound should be treated just the same as a fresh wound.

WINDGALLS

This is a dilated puff found on the posterior part of the fetlock joint. They appear in the form

of soft tumors and in some cases get to be of very good size. Usually these are painless and only cause lameness when they get large enough to interfere with the action of the joint.

Causes—May be caused by severe labor, heavy pulling, fast driving, jumping, and may follow internal disorders such as pneumonia, strangles or distemper.

Treatment—In the first stage use cold applications through the day and tight bandages at night and blisters, if necessary. In the chronic cases use blisters four or five times in succession and in case of lameness they should be pin-fired. In the most severe cases a surgical operation has to be resorted to. This operation can be done with great success.

FLYBLOWS
GRUBS IN THE SKIN

The following flies deposit their eggs on open sores or on wet filthy parts of the skin where their grubs give rise to serious trouble: Lucilia cæsar or bluebottle, Lucilia hominivorax or Schrewworm fly, Musca vommetoria or meat fly, and Sarcophaga carnaria or flesh fly. To prevent their attacks the wet filthy hair should be removed and the wounds kept clean and rendered antiseptic by a lotion of carbolic acid one part and water fifty parts, or by a mixture of one ounce oil

of tar in twenty ounces of sweet oil, or by using any good antiseptic.

If the grubs are already present they should be picked off and one of these dressings applied.

STINGS OF BEES, WASPS AND HORNETS

These are much more irritating than the bites of flies, partly because the barbed sting is left in the wound. When a swarm attacks an animal the result may prove fatal.

Treatment—The embedded stings should be extracted with fine forceps or with the finger nails. The application of wet clay or soda or ammonia or carbolic acid. Another good lotion is sugar of lead two drams, one ounce laudanum and water one pint.

ECZEMA OR INFLAMMATION WITH BLISTERS

This term is applied very generally to eruptions of any form that comes on a horse. Eczema may appear on any part of the body, but on the horse it is more common on the heels and lower part of the legs.

Causes—Constant contact with manure, urine, mud, snow, ice, drafts or cold air on wet legs, often follows indigestion and sometimes comes from the sweat running down the legs. In high class horses that are well fed and always kept in the stable, eczema may last for years.

Treatment—Always give good physic and get the blood thin and follow with a tonic, as: Nux vomica, two ounces; gentian, one ounce, and ginger, two ounces; ground flaxseed meal to make twelve ounces. Give one tablespoonful in each feed. Or you can give Fowler's solution of arsenic in teaspoonful doses twice daily. If an external treatment is necessary, soak the scabs in fresh sweet oil and wash off with soft water and soap and follow with a sulphur ointment and if necessary follow this with a mercurial ointment.

HARNESS GALLS

Bad fitting harness and saddles are the cause of many wounds and abrasions of the skin. Horses are subject to this after being kept in the stable for some time on a scanty diet, as in the winter when he is soft and tender. The chafing from the harness is likely to form abrasions and then abscesses and finally leave a bad blemish for life if it is not attended to at once.

Treatment—These are easily prevented by getting the horse in condition before hard work. The harness should be kept clean and well fitted. Parts of the horse where the harness is most likely to chafe, as on the back, should be kept free from all dirt. The remedies for harness galls are numerous. I will mention just a few: Alcohol, one pint in which are well shaken two eggs.

Sugar of lead, twelve grains; sulphate of zinc, ten grains, to an ounce of water. Carbolic acid ointment or carbolic acid one part to fifteen parts of glycerine.

BOILS OR FURUNCLES

These are common on the back, shoulders and lower parts of the limbs, mainly because there is where chafing occurs. In many cases the cause is constitutional or comes from unwholesome diet, overwork and general loss of health. Boils differ from other pus producing pustules because they form deeper in the skin and form more of a core and the pus is found around this core.

Treatment—The most common treatment is to use a poultice until the boil becomes soft and then cut it open and squeeze out the core and follow with an antiseptic dressing. Another good home remedy is to blister or use a mixture of sugar and soap. Cleanliness of the skin and any good blood tonic are necessary.

FISTULA

Fistula is applied to any pus forming cavity that has no drainage. A fistula comes on any part of the body, but is generally known in the horse as fistula of the wethers or of the poll or poll evil.

Causes—Fistula as a rule starts from a bruise, a wound or long continued irritation of the har-

ness. Among the common causes are chafing from the halter, hitting the head against a low door, or manger, bad fitting collars or saddle, blows from a whip, or the animal rolling on a rough object. If a bruise is treated properly, there will be no need of having fistula.

Symptoms—These will vary according to the stage of the disease. After an injury we will notice the patient being stiff and a slight soreness if he be touched in this region. After a day or two we will find the parts beginning to swell and the main part of the soreness will leave but the swollen parts will continue to get larger. This enlargement will get soft in one small spot at the upper part and if it is not opened it will finally break and form a running ulcer.

Treatment—When the soreness first starts you can use cold applications and follow with any good absorbent liniment and prevent any further trouble. At all stages of this disease give a physic and follow with a blood tonic such as Fowler's solution of arsenic in teaspoonful doses twice daily. After the pus has begun to form use hot applications and follow with a light blister until the enlargement gets soft, then make an opening at the lowest point so as to give a good bottom drainage. There are many good fistula cures, but the main thing is to use something to eat out the tubes which form in this cavity. You

will find my treatment with full directions in the prescriptions in the back of this book.

ABSCESS

An abscess is a cavity containing pus. Abscesses are caused from a bruise or may follow some disease, such as distemper, strangles, catarrh, nasal gleet, or may follow pneumonia. The glands where it forms swell and become painful to the touch. The abscess may become absorbed by the blood or may form pus.

Treatment—If it is noticed when it first begins you can use hot applications and follow with some mild liniment which in most cases will save tapping it. But if the pus forms use a strong liniment and draw the pus to one place and as soon as it becomes soft it should be opened at the bottom of the pus cavity. Keep the wound open where it is tapped and cleanse with peroxide of hydrogen and follow with carbolic acid wash twice daily.

SUMMER SORES

These may appear on any part of the body, but are more common where the harness touches or on the lower part of the limbs. They may vary in size from that of a millet seed to an inch in diameter. They cause intense itching and the victim rubs and bites the parts until they become very raw. These sores resist treatment through

the summer months, but they are very easily healed up through the cold weather, but as soon as summer returns the sores begin to reappear. The history of these is unknown, but it is thought that it is taken in through the feed or water.

Treatment—Put the patient in a cool place and shower the parts with cold water. The only medical treatment that I have found to be of any benefit is to rub the sore with iodoform and cover this with a layer of collodion and repeat the application every twenty-four hours, for about two weeks or until the sores are well healed.

LOCKJAW OR TETANUS

The first thing is not to think that the horses' jaws must be locked before he has tetanus or lockjaw, for he may eat and seem apparently all right for a week before his jaws are set. At the beginning the muscles become rigid, the spasms affect the eyes, neck, face, body and limbs. The main symptom is the throwing back of the haw of the eye.

Causes—This is caused by a bacillus that is found in the soil, manure and dust. The infection generally comes through wounds, such as nail pricks, castration, docking, setons, and quite often from internal injuries.

Symptoms—These can easily be remembered if a person has ever seen a case of this kind. The

main symptoms are difficult chewing, the protrusion of the haw over the main part of the eye, the tail is elevated, the muscles become hard and rigid, the limbs are stiff, the gait straddling, and the animal becomes very nervous at the least noise.

Treatment—The patient should be placed in a dark box stall without any bedding and as far away from all other stock as possible. Always give tetanus antitoxine which is always obtainable at any first-class drug store. The full directions are on each package. Give physic the first thing; barbed aloes, six drams in two ounces of olive oil. Give bromide of potassium in tablespoonful doses in each feed. Give rectal injections of one teaspoonful of carbolic acid in one-half gallon of warm milk twice daily.

CONGESTION OF THE UDDER

This is very rare in the mare, but sometimes before or after parturition a mushy swelling, beginning at the udder, extends forward as far as the front legs. When this is let run inflammation will set in, the milk will dry up, the animal becomes lame, has fever, shows a general disorder and very often there will be an abscess form or gangrene set in.

Treatment—This will be simple as long as it is just congestion. Active rubbing with lard or

camphorated oil and frequent drawing of the milk will bring about a rapid recovery. After inflammation has set in use hot application and follow with camphorated oil, six ounces, and tincture of belladonna, one ounce, rubbed in well. Always give a good laxative, such as four drams of barbed aloes. Give one-half ounce doses of saltpeter in the drinking water twice daily. To draw off the fetid liquid, it may be necessary to use a small milking tube and do not forget that a mare has three openings in each tit and draw off the matter through each opening. If an abscess has formed it can be opened at the softest spot with any kind of a clean knife and treated the same as any abscess. When the udder is very hard it can be bathed twice daily with an iodine ointment.

BLEEDING FROM THE NOSE

Sometimes it is an independent affection and sometimes it occurs in the course of some other disease, as influenza or bronchitis. This is a very good symptom of tumor in the nose. Sneezing, overexertion and injuries to the head are good causes. The blood generally just drops from one nostril only, and is never considered dangerous, for if the blood comes from the lungs, it is very frothy and comes much faster. If the bleeding continues, wash out the nose with cold water. If the cause is known, you can be guided

accordingly. If necessary you can use ice packs on the head and ice water between the eyes. If you have to use medicine give one ounce of ergot as a drench in warm water.

LAMPERS OR LAMPAS

This name is given to a swelling of the mucous membranes covering the hard palate of the mouth and projecting in a prominent ridge immediately behind the front upper teeth. This is a natural swelling and occurs in the healthy horse. This is very common while the teeth are being cut, because the blood supply is increased.

Treatment—The object is to allow the escape of the excess blood. This should be done with a sharp knife. Cut each ridge deep enough to cause it to bleed freely. There is never any danger of getting too much blood. Do not burn the lampers or scrape them with an ear of corn.

PART II.

BLOATING OR ACUTE TYMPANITES

This is the swelling of the cow in the left flank, caused by the formation of gas in the paunch or rumen. The causes of this are many. The one we most frequently find is when the cattle are first turned on young clover which they eat very greedily. Turnips, cabbage, potatoes, middlings and corn meal often give rise to this. Eating too much or eating too fast of any kind of feed may cause this. Wet grass, clover, frozen roots or pastures covered with frost should be guarded against. A cow that is choked will often bloat.

Symptoms—The swelling of the left flank, the drumlike sound when you tap the flank with the ends of the fingers, and, in bad cases, the upper part of it rises above the level of the backbone. After it has run for some time the animal breathes hard, reels when it walks and in a short time falls and dies from suffocation.

Treatment—In mild cases give plenty of exercise and cold applications to the sides. A greased rope in the mouth often causes the gas to be passed off. In urgent cases the gas must be allowed to escape and this is best done with a trocar which every cattle raiser should have. If this instrument is not at hand use a small bladed knife and make your incision at an equal distance from

the point of the hip to the last rib and equal distance from the projection of the backbone. This should be made downward and forward. After the knife is inserted, put a goose quill in by the side of it and remove the knife. Always follow with a physic of two pounds of epsom salts.

DISTENTION OF THE RUMEN OR PAUNCH WITH FOOD

This is a form of indigestion produced by the animal gorging itself with food, it does not need to be spoiled or poor feed, but can come from the very best. The severe cases come from the food being very hard to digest. There is but very little gas formation in these cases and what little there is formed is spread through the contents of the stomach instead of accumulating in upper portion. When pressing on the left flank with your fist it leaves the print of your hand just the same as it would if it were a mass of dough.

Treatment—This should be treated with stimulants, such alcohol, brandy or aromatic spirits of ammonia, and followed with a good physic of two pounds of epsom salts. If this fails, you should have an incision made in the left flank with a long bladed knife. Begin the incision where you would tap a cow for bloating, and cut down far enough so the operator can admit his hand. This cutting should be done by cutting

the whole opening without removing the knife. There should be two assistants, one on each side, to hold the edges back so the operator can empty about two-thirds of the contents of the stomach. After this is done the edges of the wound should be washed with a good antiseptic and the stomach and the outer part sewed separately. The wound should be washed twice daily with the following: Sulphate of zinc, one ounce; acetate of lead, one and one-half ounce; glycerine, two ounces, and water to make one pint. This operation should be done by an experienced operator.

LOSS OF CUD

This is a very common expression among the farmers when there is anything the matter with a cow. This expression is correct if meant right. Most people think that the cow loses her cud by dropping it out of her mouth and that there must be a cud made for her out of a greasy dish-rag or something of the kind. This is not a disease of itself, but shows that the animal's digestive functions are not performed regularly and the animal does not ruminate or belch up the food. This is a symptom of a great many diseases and should cause the attendant to look the animal over closely and form a correct opinion of the disease from which the animal is suffering.

INDIGESTION OR GASTRO INTESTINAL CATARRH

This form of indigestion does not necessarily denote bloating, but it is sometimes present. If indigestion is let run for sometime, the abnormal products will cause catarrh of the stomach or intestines.

Causes—Overloading of the stomach, damaged or irritant food, sudden changes of diet, want of exercise and food that is hard to digest will, after a time, cause this. An insufficient amount of water, as in seasons of drought, will favor this disease.

Symptoms—Rumination irregular, depraved appetite, tongue coated, mouth slimy, bad smelling dung, a slight bloating and fullness of the flanks. No sound in the stomach and the animal breathes with a grunt. After some time there is no dung passed, but a small amount of mucus oozes out of the rectum. In mild cases this lasts about a week, but in the severe ones it may last several weeks.

Treatment—Small quantities of sweet silage, select grass or clover hay given several times daily. About two ounces of chamomile flowers should be boiled for thirty minutes, and after it has cooled given to the animal. This can be repeated three times daily. When constipation is present, the following physic can be given: One

pound Glaubers salts in quart of warm water and one pint of molasses. After the physic has worked, give the following to act as an appetizer: Two ounces powdered ginger, two ounces nux vomica, and ground flaxseed meal, one-half pound. Give one tablespoonful three times daily. Laxative food in moderate quantities after a return of the appetite.

COLIC OR INDIGESTION AFTER DRINKING COLD WATER

This trouble is produced in cattle by drinking cold water, which stops digestion and produces cramps in the fourth stomach and sometimes in the bowels.

Causes—As a rule a cow drinks water very slowly and not very much at a time. It would be contrary to nature for the cow to drink fast and very much at a time; but in hot weather when it has traveled for some distance and is given access to cold water it will bring on colicky pains. Cattle that are fed on dry feed or dry hay often drink large quantities of cold water and are affected the same way only they are taken with a chill before the cramps come on.

Symptoms—There is but very little bloating or distention with gas. Colic in the cow always comes on after drinking cold water and there can be no doubt as to the diagnosis.

Treatment—Always give the animal ten or fifteen minutes' exercise before you give any medicine, as this gets the stomach in condition to take care of the medicine and often acts as a cure. If treatment is necessary, give one-half pint of whiskey or one ounce of powdered ginger in a pint of warm water and repeat in forty-five minutes, if necessary. If this does not give relief, give one ounce each of sulphuric ether and tincture of opium in a pint of warm milk and repeat in thirty minutes, if needed. After giving any of these treatments follow with a physic of two pounds of epsom salts.

DIARRHEA OR DYSENTERY

This is a symptom of irritation of the intestines and is caused by improper feeding, irritant foods, chilling or exposure, indigestion, diseases of the intestines or by parasites.

Symptoms—At first the passage from the bowels is thin and frequent, but after a time it becomes watery and very offensive smelling and sometimes it is streaked with blood. In the beginning the animal is strong but soon becomes weak and has some abdominal pains, looks around at its sides, moves around very restlessly, draws its feet together and lies down. In many cases there is fever, loss of strength and flesh and finally ends in death.

Treatment—All depends on the cause and the care taker must determine this. When from an irritating cause, the patient should have a mild purgative, such as a pint of castor oil. If this does not prove satisfactory, give one-half ounce of tincture of opium in a half pint of warm milk and to this may be added four ounces of whiskey or brandy, if necessary. Good home remedies are strong coffee, raw eggs, or rye flour. In all cases you must feed very sparingly.

CONSTIPATION

This is not regarded as a disease of itself but more a symptom of some other disease or the result of poor feeding. It occurs in most all diseases where fever is present, in obstruction of the bowels and from feeding dry bulky food. Young calves often suffer from this disease just after birth when the feces that is in the bowels before birth is not passed. Warm soap and water injections or one ounce of castor oil and plenty of the cow's first milk is all that is necessary in such cases. The main treatment in constipation in the cow is to remove the cause which gives rise to it. A change in the feed will correct this trouble in most cases better than medicine. Small doses of physic given often are better than one large one. Flaxseed is the best food laxative that can be fed.

JAUNDICE OR CONGESTION OF THE LIVER

In this case we find a yellow appearance of the skin, eyes and the mucous membranes of the mouth. Jaundice is mainly a symptom of other diseases and we should look for the cause or causes of it. Anything that will close up the orifice of the biliary duct will produce jaundice and this is very often the case in constipation. It may be caused by gallstones or parasites. Cattle that are fed high for show use, or any cattle that have no exercise, are good subjects.

Symptoms—Poor appetite, the animal does not want to drink, pressure along the short ribs causes pain, the membranes of the eyes and mouth are yellow, the patient lies down the most of the time, moans when it moves and has a very tottering gait. The milk secretions are diminished and that which is secreted is very bitter. In some cases the animal has a dry painful cough.

Treatment—When the bowels should be moved off give the following physic: One pound of sulphate of soda, one pint of molasses and one quart of warm water. After the physic has worked, the patient should have one tablespoonful of artificial Carlsbad salts in the feed three times daily. In all advanced cases use injections of warm water and soap to relieve the pressure. The diet should

be laxative and moderate in quantity and always give grass, if in season, and if not, bran mashes and clover hay.

SNAKE BITES

The poison contained in the tooth glands of some snakes will produce very serious local irritation and in some cases very serious constitutional disturbances. Some of the poison of the snake is carried to the heart and causes death, while others cause local inflammation, gangrene or external sloughing.

Symptoms—Local swelling, pricks where the fangs penetrate, depression, weakness, difficult breathing, weak pulse, stupor and sometimes convulsions. If the poisons are not strong enough to cause death it will likely cause severe abscesses.

Treatment—Locally every effort should be made to absorb the poison. If the bite is on the legs you should tie a string very tight just above the bite so as to shut off the circulation. The wound should be freely incised so that it will bleed freely. Permanganate of potash in five per cent solution should be applied and also injected into it. Give strong stimulants internally, such as alcohol, coffee or aromatic spirits of ammonia. A special antitoxin for the treatment of snake bites is now prepared and can be had from any leading druggist.

BEE AND WASP STINGS

The bee and wasp secrete a very poisonous substance which they are able to insert through the skin of an animal. This poison is an irritant and might cause blood poison.

To produce any bad effects it must be introduced in large quantities, such as the animal getting stung by a swarm of bees or wasps.

Treatment—Wash the parts with diluted ammonia and give stimulants internally. If the animal begins to swell about the head and neck and it begins to shut off the breathing, a tube should be inserted in the windpipe.

BLEEDING FROM THE NOSE

This is very common in cattle and is seldom serious. It usually results from some disease, injury to the mucous membrane or from violent exertions in sneezing or coughing. The blood usually comes in drops from one nostril and is usually accompanied by sneezing. Bleeding from the lungs comes from both nostrils, is frothy, bright red and accompanied by a cough.

Treatment—Find the cause and you can be guided accordingly. If necessary, keep the animal quiet, bathe the head with cold water and wash the nose out with the same. In severe cases tie the head up to a high rafter and apply the ice packs to the back of the head and if necessary,

give one and one-half drams of acetate of lead in one pint of warm water.

BRONCHITIS

Bronchitis is an inflammation of the mucous membrane lining the bronchial tubes and is generally the result of the animal catching a bad cold. It may be caused by the introduction of foreign bodies into the bronchial tubes, which is a bad result of drenching, or it may be caused by the breathing of impure gases.

Symptoms—Coughing, loss of appetite, short painful breathing, the head is distended, the eyes inflamed and the pulse is very rapid. If the disease does not terminate favorably there is danger of complications of lung fever. These tubes close up in some cases and the animal dies from suffocation.

Treatment—If in season and the weather is nice, place the animal on grass and if not, put it in a light, well ventilated box stall. The food should be light and nutritious. Give the following as a drench after each feed: Tincture of chloride of iron, 1 ounce; tincture of aconite, four drams, and glycerine to make one pint. Give six tablespoonfuls of this at a dose.

PNEUMONIA

This is an inflammation of the lung substance. Some writers divide this into several forms, but

it takes an expert to distinguish them so we will take it all under one head. The causes of this are the same as any other disease of the respiratory tract. It generally follows congestion of the lungs, but it can originate from a parasite.

Symptoms—This disease is usually ushered in with a chill and this is followed by a high temperature, usually 104 to 107, and sometimes higher. The breathing is very quick, the nostrils dilated, pulse full and hard, may or may not have a cough, the coat is staring and the skin very dry. Scanty and very high colored urine, and the bowels constipated. The animal always keeps a standing position with the forelegs wide apart and the elbows turned out. The extremities are hot and cold alternately, and if this is in a cow, the milk flow is suspended. The appetite is always poor until recovery begins.

Treatment—Good fresh air, clean surroundings and proper nursing are of as much help as medicine. If the fever is very high, give one or two drams of tincture of aconite every four hours until it abates. If the bowels are constipated give two or three drams of calomel. One pint of whiskey can be given with the gruel twice daily to act as a stimulant. Bathe the region of the lungs with some strong liniment, but do not blister them. Any form of nourishment should be given that the animal will take, and always

grass if in season. Above all, let the patient have plenty of fresh drinking water.

HEAVES OR EMPHYSEMA

This consists of a rupture of the small air vessels of the lungs. Respiration is very much interfered with as the expiration is prolonged and the inspiration is short. The appetite is generally good and the milk-flow holds up well. This may be the result of bronchitis or it may follow an attack of asthma. The animal gets poor, has a staring coat and is generally hidebound. If the region of the lungs is tapped with the fist, a drum-like sound is heard.

Treatment—This is an incurable disease and the only help that can be given is rich food to hold the animal up in flesh. From a financial standpoint as well as from a humane standpoint, the animal should be destroyed.

HEAT PROSTRATION OR SUNSTROKE

This is not very common in cattle as they are very seldom worked and when in pasture they can select cool places in the heat of the day. In some cases, where cattle are kept up for the purpose of fattening and then driven to market in hot weather, they sometimes are overcome by the heat. Remember that cattle do not have to be exposed to the direct rays of the sun to become prostrated, for those that are in close, hot places often suffer.

Symptoms—Dullness, exhaustion, panting, frothing at the mouth, tongue hanging out, uneasiness, staggering gait, then falling and struggling for some time and then may become very quiet. In serious cases the attack may be very sudden and the animal will become unconscious without any previous symptoms of distress.

Treatment—If the case is not severe the patient should be moved to some quiet place and with rest and light diet a recovery will soon take place. If the animal falls, apply cold water or ice packs to the head and rub the limbs and body with bunches of hay. If it can swallow, give spirits of nitrous ether, three ounces to the pint of water, or aqua ammonia one ounce to the pint of water, and repeat in one hour. If these are not at hand give one pint of whiskey in a quart of warm water. If the animal goes down out in the hot sun it should be removed to the shade as soon as possible. Give all the cold water it will drink. When the animal is up and the strength is good give one and one-half pounds of epsom salts before giving much food. Just after the animal has suffered from heatstroke the flesh is not fit for food.

LIGHTNING STROKE

When an animal is struck by lightning the shock acts instantaneously on the nervous system and, as a rule, death occurs at once; but if the

shock is not fatal, the animal becomes prostrated, unconscious, and sometimes paralyzed.

Symptoms—The symptoms vary according to the shock. The animal falls, the muscles may be completely relaxed, the legs limber, the muscles flabby and soft to the touch, sometimes convulsions, spasms and twitching of the muscles. Generally labored, irregular, or interrupted breathing, and sometimes slower than normal. In some cases the electricity singes the hair, inflicts wounds, burns or blisters.

Treatment—As long as the heart keeps beating it is advisable to keep trying to save the animal. Dash cold water in the face and over the body, rub the legs well and slap the body with wet towels. Mustard mixed in a little warm water should be rubbed on the back of the head, neck and limbs. Give rectal injections of two ounces of hartshorn well diluted with warm water and repeat every four hours. This same treatment can be given internally as soon as the animal is able to swallow. If the care-taker is careful it is well to let the animal smell the hartshorn, but be careful that not too much of it is inhaled. Artificial respiration can be tried if necessary. After the serious symptoms you should give two-dram doses of sulphate of quinine twice daily. If there are any abrasions, treat them antiseptically, the same as any wound.

CONTAGIOUS ABORTION

Any of the non-contagious forms of abortion may become contagious if not taken care of at the proper time. One of the most common causes of contagious abortion is for a bull to serve a cow from an aborting herd and then serve one from a healthy herd. An aborting cow may come into a healthy herd and not cause the herd to abort for many months and again they may abort in a few weeks. A good beginning for contagious abortion is when a cow is not kept clean after calving and allowed to run with the rest of the herd. This may be transferred during feeding, the cows licking each other or when a herd is at pasture.

Preventive Treatment—Prevention first, if possible. Do not let your cows get run down and poor or let their blood become thin. Be careful as to the kind of feed, such as moldy feed or feed spoiled while green by rain. Keep pure water and always keep the tanks clean. Do not make too sudden a change in the feed and, above all, keep your cows clean during calving.

Treatment—First, separate all of your aborting cows in clean building or yard and do not leave any pregnant animals with them or near them.

Second, clean and wash out your stables several times with any good antiseptic.

Third, wash off the cow around the tail and rump and inject about one quart of the following solution each day for two or three weeks: One tablespoonful of creolin, two ounces of alcohol and two ounces of glycerine to one gallon of warm water.

Fourth, in case of abortion the fœtal membranes should be removed at once and together with fetus should be destroyed by burning, and not buried.

Fifth, do not breed aborting cows for three or four months and then use a separate bull, and never use your herd bull.

NON-CONTAGIOUS ABORTION OR THE SLINKING OF THE CALF

Abortion in the cow most frequently occurs at those three-week intervals at which time the cow would have been in heat if not pregnant. Poor condition, weakness and a watery state of the blood are the foremost causes. These are brought on by poor feeding, from worms, leaving the calf on the cow too long, damp unhealthy buildings, disease of the abdominal organs, such as indigestion, heart trouble and kidney or bladder trouble. Moldy feed of any kind, kicks or strains, cows riding each other, slipping on the ice, and shipping are good causes. Among many other causes may be named the death of the fetus

caused from the navel string becoming tied in a knot and stopping the circulation.

Treatment—If symptoms of abortion have appeared and the fetus is not dead, and if the waters have not been discharged, nor the water bags presented, attempts should be made to check the progress. All causes should be removed and the animal placed in a quiet, dark box stall and given treatment to stop the labor pains. Give laudanum in one to two-ounce doses every three hours until all labor pains have stopped. If this does not hold them down give bromide of potassium in teaspoonful doses every five hours until six doses have been given.

EVERSION OF THE WOMB

This is a result of failure of the womb to contract after calving. When the womb fails to contract the closed end of one of the horns (of the womb) may fall into its open internal cavity, and under the compression of the adjacent intestines, it is forced farther and farther, until the whole organ is turned outside in and then slides back through the vagina and hangs from the vulva. The womb can be distinguished between the bladder and vagina by the presence of the mushroom-like bodies which are attached to it. After it is out for some time it becomes inflamed and gorged with blood until it is as large as a bushel basket.

The surface of it has a dark red blood-like hue and bleeds at the slightest touch. Just after the protrusion the general health is not altered, but after inflammation has set in and the violent straining has caused exhaustion the cow lies down and fails to rise.

Treatment—Cleanliness is the main part of this operation. If the animal is lying down it is best to put an oilcloth under the womb and wash it off very clean with cold water containing a small amount of carbolic acid. If the animal is standing, this work is much easier. If the cow is laboring or straining, have a helper to pinch her on the back. Place the closed fist in the center of the mass and push it back through the vagina and assist in returning the surrounding parts with the other hand. It is best after the womb has been replaced to move the hand about inside to see that the two horns are fully extended. After everything is back to its place and if the cow is not straining too much there should be three stitches taken in the lips of the vulva which will prevent the womb from returning in most cases. In some cases this will not hold and there should be a truss made of two ropes. Double each rope at its middle and place the rope so its ovoid ring will surround the lips of the vulva and tie to a collar which can be placed on the neck the same as a horse collar. The straining can be stopped by

giving two or three ounces of laudanum or two ounces of chloral hydrate.

EVERSION OF THE BLADDER

A true eversion of the bladder is something that is almost unknown in the cow, due to the extreme narrowness at its mouth. There are many cases of protrusion of the bladder due to the tearing of the vagina during calving. In this case the bladder contains urine, which is never the case in eversion, for in that case the bladder turns inside out. If the bladder is in such shape in the vulva so there cannot be a catheter passed, you will have to take a small hypodermic needle and stick this through any place that is well exposed and draw off the water and then it is a very easy matter to replace the organ. The opening in the vagina can be stitched up, but the animal should never be used for breeding purposes again.

MILK FEVER OR PARTURITION FEVER

This is a very peculiar disease and is confined to the extra good cow; by this we mean the heavy or rich milker, and is never found in the common or poor cow. It generally comes on the cow from one to five days after calving, but we have seen three or four cases which came two or three days before calving. Several writers will give you different causes of this disease, but we find that

these all fail to be accurate and the exact cause is yet unknown.

Symptoms—The cow becomes mopey, gets weak in the hind limbs, staggers, and falls and after getting up once or twice she falls and is unable to rise. The main symptom that veterinarians go by is the S shape of the neck. This is always the first prominent symptom. Sometimes the cow becomes unconscious and in many cases we find bloating.

Treatment—The most of the farmers, especially the dairy class, are up to date on this disease and have a milk fever outfit. This consists of a syringe which has a sterilizer between the bulb and where the milk tube is placed, the sterilizer contains medicated cotton. Pumping up the udder is the surest plan for there is no danger of poisoning the bag if the tit tube is kept clean. If the milk fever outfit is not at hand and the patient is in bad condition, you can use a bicycle pump by placing a rubber tube on the end so it will hold a tit tube. Insert the tube into each tit and pump the udder good and tight, tie a carpet rag around each tit to keep the air from escaping. Leave the air in the bag for two hours, then take it all out by milking and massaging the udder. After this treatment, if the animal is not up and apparently all right in two hours, it can be repeated. Give internally two drams of tinc-

ture of digitalis every hour until the animal gets up. If the animal bloats it will have to be tapped the same as described for bloating.

BLOODY MILK

Blood may escape with the milk when the udder has been injured by blows, when it is congested or inflamed, when the circulation has been increased by rich feed or when the cow is excited from heat. Tumors or induration of the glands may be good causes, the irritation caused by milking will start the blood.

Treatment—The treatment will vary with the cause. If the glands are congested, give one and a half pounds of epsom salts and follow with one-half ounce of saltpetre once daily. Bathe the bag with hot water and follow with carbolized vaseline. If it is due to the richness of the food it should be reduced. Induration of the udder can be met by rubbing the udder with iodine ointment one part and soft soap two parts. Careful milking is one of the main points.

MAMMITIS

This is an inflammation of the udder. The causes of this are many and it generally comes just before or just after calving.

Causes—Exposure to cold or wet, standing in cold drafts, blows on the udder with clubs, stones, horns, or feet; injuries from a sharp or cold

stone, or a nail sticking through the floor where the animal lies, sudden changes in the weather, overfeeding, especially with cotton seed meal, peas or beans, sores on the tits, or from insufficient stripping.

Symptoms—Heat or tenderness to the udder are the first noticeable symptoms. When this has run for a few days the hot, tender udder causes the animal to straddle with the hind limbs and when walking it stops on the affected side. When the cow lies down it is always on the unaffected side. When the bag becomes tight and is touched it leaves the print of the finger. In all cases the milk flow is suppressed and the milk replaced, at first with a watery fluid streaked with blood, then with clotted milk, and finally with puss. Sometimes this disease runs a rapid course and at other times it is very slow.

Treatment—In most cases the animal has a chill and this must be the first thing to look after by blanketing the animal, giving warm water injections and one-half pint of whiskey in one quart of warm water. Milk the cow out well and massage the bag with the warm milk and follow with camphorated ointment which must be rubbed in well. Be very careful about milking and if the udder is very tender this is best done with a milking tube. Give a good physic, such as two pounds of epsom salts and one ounce of powdered ginger;

follow this with daily doses of saltpetre. Hot water fomentations or hot salt and vinegar are very beneficial if the swelling is advanced. If there is much pain the udder can be rubbed with belladonna or soap ointment. If an abscess forms it should be opened as soon as possible and treated the same as that given in abscesses.

CONGESTION OF THE UDDER OR GARGET

It is a rule in heavy milk cows that just before and after calving that the mammary glands are enlarged, hot, tense and tender and there is a pasty swelling in front of the udder on the lower surface of the abdomen. In most cases this congestion leaves in a few days after the milk-flow gets a good start. This can be broken up very easily by letting a hungry calf knead the udder with its nose or by stripping the udder out three times daily and rubbing it well with the milk. In many cases where the owner is going to have a sale, or neglects the milking to show the cow's udder, it is followed by congestion. Some cases of congestion go so far that pus forms. In these severe cases the udder should be rubbed well with camphorated ointment.

COWPOX

This is a contagious inflammation of the udder which is spread mainly by the hands of the milker

and not from one animal to another. In some cases where the man that milks also grooms the horses, he can carry it to the horses and it affects the heels and lips. This disease is considered the same as smallpox in the person.

Symptoms—The first symptoms are tenderness of the tits and a slight fever which is preceded by a chill. The tits become redder and warmer and at the end of a few days are covered with little pea-shaped nodules which in some cases become an inch in diameter. The milk-flow is diminished and when the ulcers are on the tit where there is no hair they form a blister which must be opened in several places to allow the escape of the pus. If these nodules form in the hair they do not raise as a blister but keep secreting a straw colored fluid. In this last form when the pus escapes there is a scab forms and in a few days this drops off and healing takes place, but leaves a few pits in the skin. But in the tits the healing is very slow and the tit becomes very sore, due to the milking which keeps the sore aggravated.

Treatment—Gentle milking and the use of a tit tube is better than the hand. Any treatment that will heal a sort tit is advisable. Wash the tit with a solution of one tablespoonful of creolin to a quart of warm water to keep the germ from spreading.

CAPPED TITS

This may be caused by anything that will irritate them, such as the powerful sucking of the calf, the chilling of the tits after the calf has just sucked, the wind striking the tit after it has been milked with a wet hand, direct contact with cold water, or the coming in contact with the filth while lying down in the stable. This may be slight or it may form large sores and cause retention of the milk or inflammation of the udder. Applications of vaseline are soothing and in mild forms will heal them in a short time. If this does not heal it readily, you can add twelve grains of balsam of peru to each ounce of vaseline. The home remedy of tallow is a very useful one. If the sores become large ones, it can be washed with the following: One ounce of sugar of lead, one ounce of sulphate of zinc, one-half ounce of belladonna to one pint of warm water and wash twice daily.

WARTS

Warts in cattle may come any place, but they are generally found on the udder or tits. The warts on the body vary in size from that of a pea to a walnut. Those on the udder and tit are generally small, but may come in very large bunches, sometimes they cover all four teats and part of the udder.

Treatment—The large body warts should be treated the same as those in the horse. Scrape the wart until it is raw and cover it with powdered arsenic every other day until it drops off and treat the wound antiseptically. The other warts can be removed by bathing the parts freely with castor oil twice daily.

WARBLES OR BOTS

These bots are about one-half an inch long and resemble a bee. They appear in warm weather and lay their eggs upon the cattle; they often frighten the stock and cause them to stampede. Some say that the fly penetrates the skin and leaves the eggs under it while others claim that the egg is laid on the skin and is licked off by the cattle and the infection comes through the mouth. These warbles may appear under the skin on any part of the body. They are sometimes found deep in the back and in the spinal canal. These generally appear from the first of January to the last of May. Where these mature the bots work their way out and drop to the ground and remain there for about a month. These warbles sometimes weaken the animal and cause a decrease in the milk-flow. Early in the season the swelling should be injected with kerosene or the grub should be pressed out and de-

stroyed. Some advise a coating with train oil two or three times during the season.

CONTAGIOUS SCOURS IN CALVES

This causes more deaths than any other disease in young calves. This appears just after birth and never later than the second day.

Symptoms—Great dullness, weakness, prostration, sunken eyes, retracted belly, short hurried breathing, very low temperature; the calf lies on its side with the head resting on the ground. The discharge from the bowels is yellowish white and very offensive. Death generally follows in from twenty-four to thirty-six hours. When one calf in the herd dies with this it will almost invariably affect all the other calves born in the herd and will stay with the stables for years. If a calf does recover from this disease it is a very fit subject for some form of lung trouble.

Treatment—There is no treatment for the sick calf, but the object should be preventive. When this attacks a herd the cows that are springing should be kept in quarters as far from the cow stable as possible. After a healthy calf is two weeks old there is no danger in this form of scours. The cow stable should be kept very clean and kept well disinfected for at least a year before letting any cows calve in it.

DEHORNING

Dehorning in the old countries is against the law because they think that it is cruelty to animals. We think, in this country, that it is not cruelty to animals to dehorn, but cruelty to animals and to people not to dehorn. This operation is easiest done when the calf is but two or three days old. Lay the calf on its side and it is very easy to hold with the help of one assistant. Clip the hair around the frontal bone, where the horns begin to form and use a stick of caustic potash, dip this in cold water and rub the horn well for fifteen seconds, then turn to the other side and repeat the same thing; by this time the first side has become dry and it is well to go over both a second time. This should be done to all cattle that are kept to be cows or steers. The herd bull should be left along until he finds out the use of them and then they should be sawed off, which makes a very gentle animal out of him. This form of dehorning can be done either by throwing the animal or by placing him in a chute. Either way is practical, just so you have the animal secure and in a position that you can get to the horn. This is best done with an ordinary jointing saw and should be done quietly and quickly. This can be done any time except in fly time. Cold water or a little flour is the only dressing that is necessary.

ECZEMA

This is a non-contagious inflammation of the skin, accompanied by itching, ending in a watery discharge with the formation of crusts or in scaling off. This may run a light course and then leave or it may become chronic. This is more common in horses than in cattle. Among cattle it is caused by filthy stables, lousiness, overfeeding, excessive damp or too warm stables, incorrect use of blisters, by turpentine or mustard, using too strong louse medicine or fly-killer. Cattle that are fed on the refuse from distilleries are generally attacked on the legs.

Symptoms—Itching, swelling of the skin, rounded elevations of the skin, which contain a clear watery fluid, exudation of pus, scaling off and redness or thickening of the skin. Sometimes they rub until the skin becomes so raw it bleeds. This disease may come in small areas or it may come all over the body. In old standing cases the skin will break and form fissures especially on the neck and limbs where they bend.

Treatment—Eczema is very hard to treat for there is no certain line of treatment that can be used, even if you do begin early. If the cause is the general health of the animal, it should be looked after before you can derive any benefit from other treatment. Under any circumstances

give a good blood tonic for which use Fowler's solution of arsenic in the feed. Tablespoonful in feed twice daily. Wash the whole body with a creolin solution, about four ounces to the gallon of water. Then rub well the affected parts with benzoated oxide of zinc ointment. If the itching is too severe, you can wash the parts with two drams of boracic acid to the quart of warm water. Do not wash the body too much as it might prove very harmful.

BOILS OR FURUNCULUS

This is an acute affection which usually involves the whole thickness of the skin and is characterized by the formation of abscesses. These usually terminate by absorption or by the formation of a sore which sloughs out and leaves a deep cavity, which soon heals.

Causes—A bad state of the blood which is generally caused by indigestion or kidney trouble.

Symptoms—Boils in cattle generally come singly and not in bunches; they vary in size from that of a pea to that of a hen's egg. At first the abscess is very small, painful to the touch, and gradually increases in size until the death of the central portion takes place and the core is released.

Treatment—If the boil is where you can, it should be poulticed and if not use a strong lini-

ment until it becomes ripe. As soon as the most prominent part becomes soft it should be opened and the core squeezed out. Use carbolized vaseline until the hole is well filled up. If the animal is in poor health give the following tonic: Copperas, nux vomica, gentian and ginger equal parts, one tablespoonful twice daily.

LUMP JAW OR ACTINOMYCOSIS

This is a very common disease among cattlemen and is thought to be brought on by an external injury, but there is always a parasite in the lump which causes the bone to become diseased. Some lump jaws are hard from the beginning and never become soft; these are the ones that do not respond to treatment. The most cases start with a soft, mushy growth which is attached both to the skin and the bone. These often break both on the inside and outside. When they break on the inside a few of the molar teeth become loose and it interferes with eating. When it breaks on the outside it forms a fistulous tract.

Treatment—The lump before it breaks should be bathed or painted with tincture of iodine. After it breaks it should be injected with the same once daily. Give internally iodide of potassium in one and one-half dram doses twice daily for ten days, and stop ten, and repeat, if necessary.

Some have good results by cutting the lump off the jaw and burning it with a hot iron. This treatment I have tried but have not found it satisfactory.

FOUNDER OR LAMINITIS

This is an inflammation of the sensitive structures within the wall of the hoof which, in many cases, ends in suppuration and the loss of one or both toes.

Causes—In cattle it is caused by overfeeding, overheating, standing on a cement floor without bedding or exercise, or by driving a long distance over a rough road.

Symptoms—The feet become very hot, sometimes swell, the animal is unwilling to stand, and if pressure is used on the foot with pinchers it will show signs of pain. When the animal is made to move, the steps are very short and hesitating. As a rule they keep eating and drinking. The temperature is high and the breathing fast. Founder can affect all four feet, but as a rule it comes in the front ones.

Treatment—If possible stand the animal in running water with a soft bottom, and if not, use cold packs on the feet. This treatment will be sufficient, except the giving of a good physic of two pounds of epsom salts, and if necessary you can follow with ounce-doses of saltpetre twice daily.

LOSS OF HOOF

The toes of one or more hoofs may come off as a result of founder. A cow will sometimes become fastened between planks or other ways and pull off the walls of one or both toes in order to free themselves.

Treatment—Wash the bleeding surface with some good antiseptic and then with alum water. Apply a thick coat of pine tar, cover this with cotton and apply another coat of tar and bandage this good and tight. This may stay on until a new horn is formed unless pus forms or it gives off a bad odor. If the pus escapes from under the dressing the bandage should be removed and the wound cleansed and redressed.

FOOT ROT OR FOUL IN FEET

This is an inflammation of the feet which comes between the toes.

Causes—Filthy stables, hardening of soil between the toes, like an ingrown toe nail in man. It may be due to the overgrowth of the toes, or it can come from foreign bodies being wedged between the toes. This can spread from the pus formed in the diseased cattle and become contagious. It generally occurs in the hind feet, but can affect all four.

Symptoms—The first thing observed is the limp in walking. On examination of the foot we

find heat, swelling above the hoof, spreading of the toes, and if the inflammation is deep-set there will be pus formed in the membranes between the toes. If this is not taken care of in time there will be deep abscesses formed which will destroy the articular attachments. In this case healing will be very slow.

Treatment—In the first stages the pure creolin is the best treatment. If the pus has not burrowed beneath the horn, it is advisable to cleanse it with a strong carbolic acid solution, as one ounce to the pint of water, and above all, keep the stables clean. If sloughing has taken place the membranes should be cleansed with the carbolic or creolin solutions, and a wad of cotton covered with pine tar should be secured between the toes. In most cases poulticing with flaxseed meal is advisable. If the pus has burrowed beneath the horn, there must be a drainage made by cutting away the horn and using the foregoing treatment. If the joint has become diseased an amputation of one of the toes is the surest and quickest method for an early recovery.

DROPSY

In dropsy there is serious or watery fluid formed in the cavity around the abdomen.

Causes—This generally occurs in old animals that are fed poor feed or some that are diseased,

due to the impoverished state of the blood. Insufficient quantity and poor quality of food can cause dropsy in the young animal. This can come from inflammation of the liver and from heart and lung diseases. It is a very good symptom of worms in calves.

Symptoms—The flanks become hollow, the abdomen increases in size at the lower part, loss of appetite, sluggish in gait and the chewing of the cud is irregular. If examined closely you may discover fluid around the abdomen.

Treatment—Find the cause and remove it before beginning with any treatment. Give good rich food and if in cold weather the animal should be clothed to keep it warm. If the trouble is in the blood give a tablespoonful of the following powder three times daily: Powdered gentian, two ounces; powdered ginger, two ounces; carbonate of iron, two ounces, and powdered nitrate of potash, three ounces. A good physic should be given each day. This laxative will keep the blood thin and keep the bowels in a watery state.

ERGOTISM

Cattle are more subject to this disease than any other animal. This is generally found in rich lands and in hot and wet seasons. Rye is more subject to this than any other crop. Of the grasses that make hay, blue grass is the most

common, but it can come on red top, oats or other grains. This fungus forms itself on the seeds of the plant and they become much larger and harder than the natural seeds. The result of the animal eating this is that it shuts off the circulation to the extremities. It usually affects the ears, feet and tail and as soon as the circulation all shuts off the part soon dies. When it affects the limb the animal will become lame and a crack will form above the part where the circulation is shut off and the lower part of the leg or toes will drop off without the loss of any blood. This may act on the digestive tract and cause great irritation, or it may act on the nervous system and cause paralysis. In many cases it has caused abortion.

Treatment—This is very tedious if it has run very long, but if it is found in time you can use strong antiseptics which may save much trouble. To dilate the blood vessels give chloral hydrate and always give enough castor oil daily to keep the bowels loose. If the sloughing is very far advanced the diseased part will have to be amputated, if it is a part that can be taken off.

RETENTION OF THE AFTERBIRTH

This is most commonly seen in aborting cows and in old, thin ones, but can happen to any cow. It is caused in some cases by the womb closing

too soon around the bulk after the afterbirth and in others by the animal not having enough energy to expel it. An animal that is allowed to drink cold water just after calving, or one that has been milked out too soon, are very good subjects for this.

Symptoms—These are generally very plain as the membranes generally hang from the vulva and rot away gradually and cause a very offensive odor. When the womb closes the afterbirth that is retained begins to decay and escapes through the vulva leaving a very offensive pool on the floor and it mats the hair of the tail together. This soon leads to ill health, getting poor and drying up of the milk.

Treatment—This varies according to the condition of the patient. If it is caused by drinking cold water or being in poor health the animal should be fed good warm bran mashes containing a little ginger or black pepper and some good clover hay and this followed with a light physic of Glaubers salts. If the animal is in good condition the afterbirth should be removed with the hand, which is very easy if done carefully. This is done on the same principle as unbuttoning a shoe. Have an attendant to hold the tail to one side and let the operator grease the hands with carbolized vaseline or lard and seize the afterbirth with the left hand and introduce the right

hand into the right side of the vagina and womb. Go back till he reaches the first cotyledon or mushroom-shaped mass, to these the after-birth is connected by a thin sheath which is very easily detached with the forefinger and thumb; loosen all of these as far back as the horns of the womb and by using a little pressure with the left hand the afterbirth will drop out in a mass.

CHOKING

This occurs when the animal tries to swallow too large an object, such as a potato, turnip, apple, pear or a beet and in some few cases where they are very greedy, bran, chaff or some finely divided food can cause it.

Symptoms—Coughing very often, discharge of saliva from the mouth, and when drinking or eating the contents come back through the nose, the breathing is short, sometimes there is bloating and in some cases where the throat is not entirely closed, the water the animal drinks will pass down, but it shows great pain while swallowing. If the obstruction is in the throat it may be felt as a lump on the left side.

Treatment—If the object is in the upper throat place a gag in the animal's mouth and pass the hand back very slowly and grasp the object, removing it as slowly as possible. If the choke is not solid it can be removed by using pressure on

the outside. If it should be of soft food use raw linseed oil as a drench until it soaks loose. If none of the foregoing forms will remove it use a small piece of garden hose to push it down. The main danger in using the hose is when it is started into the throat; it should be greased well and started slowly.

PART III.

HOG CHOLERA

Hog cholera in this country causes an annual loss of many millions of dollars and makes disastrous inroads into the available meat supply of the country. The loss from this disease is yearly increasing and unless more serious consideration is given to its control, prevention and eradication the much discussed famine may become a reality.

GEOGRAPHICAL DISTRIBUTION

Hog cholera is prevalent in every state in the Union although the most serious outbreaks occur in the corn belt. This disease was probably introduced from England, about the year 1833.

CAUSE

The direct cause of the disease is an ultra-visible organism present in the tissues, excretions and secretions of cholera hogs and which produces hemorrhagic inflammations in the body of the infected animals; the lungs, intestines, kidneys, liver and lymphatic glands being the parts most commonly affected. The extensive prevalence of this disease is due chiefly to the lack of proper quarantine laws, improper feeding and filthy and unsanitary conditions too often common in hog houses and yards.

HOW SPREAD

The infection is spread from one herd to another by dogs and birds which may have visited infected yards or fed upon carcasses left to decompose in the fields; by droppings from wagons, freight cars and crates used in transporting cholera hogs; by running streams which may pass through infected regions; by bringing diseased animals into the herd, or may be carried in excretions clinging to the feet of men or farm animals in going from one pen to another.

SYMPTOMS

The symptoms of hog cholera are not constant, but may vary with each individual and with each herd. The disease may appear in an acute or a chronic form, differing chiefly in duration, *i. e.,* linger on for weeks. Also in some outbreaks practically the whole herd will be affected while in other cases only a few may be attacked. Commonly a general listlessness will be first observed. The hogs will refuse to eat, or eat very little, the ears will droop and the tail lose its curl. The pigs will huddle in their sleeping quarters and resent being stirred out. In walking they may seem stiff and sore and seem to be weak in the hind quarters. A hacking cough and watering of the eyes are commonly present. Constipation will be present at first, followed by a persistent

diarrhœa, showing characteristic foul black excretions. The infected animals will also develop a fever, showing a rise in the temperature to from 104 to 109 degrees Farenheit. The normal temperature varying from 100 to 103½ degrees Farenheit.

POST-MORTEM INDICATIONS

The post-mortem findings of an affected carcass are characteristic of cholera. The skin on the belly and other tender parts of the body shows livid red or purple blotches. The lymph glands of the body are enlarged and red or grayish red in color. The lungs have red patches and usually show congestion. The kidneys show small red spots and on the intestines are also red, inflamed patches and button ulcers.

PREVENTIVE MEASURES

Care should be taken to provide the hogs with clean feed and water, clean feeding floors and troughs, and clean sleeping quarters. Where cholera is prevalent the yards should not border running water or public roads. Keep all persons, dogs and pet animals from going among the herd and do not go from other yards into your own without properly disinfecting your shoes and clothes. Do not permit new hogs to come into your herd without first quarantining them from

four to six weeks. No animal should be brought onto the place for service. Disinfect the pens and troughs daily and keep hogs in the best possible condition of thrift.

Above all, the greatest assurance of safety is to have all hogs vaccinated with anti-hog cholera serum, to prevent the disease absolutely.

TREATMENT OF CHOLERA HERD

When an outbreak of cholera appears on the farm the herd should be quarantined and every care taken to prevent the spread of the disease. The houses and yards should be thoroughly cleansed and disinfected and in the warm months good range and shade should be provided. In the winter dry, well ventilated sleeping quarters and clean, well drained yards should be provided. At the first appearance of the outbreak or subacute form of the disease it may be practical to remove the sick from the well hogs.

A light ration of thin slop should be fed and the troughs cleansed, disinfected and turned upside down after each feeding. All dead hogs should be burned and at the end of the outbreak, the houses, yards and floors should be cleansed and disinfected. If all litter is cleaned away, the sunlight and drying may destroy the infection in the fields in a few months.

VACCINATION

The use of anti-hog cholera serum for protection of hogs against and treatment of hog cholera has been practiced for four or five years. The serum is the defibrinated blood secured by bleeding a hog that has been hyperimmunized by the injection of large quantities of hog cholera blood directly or indirectly into the circulation of the animal.

In the vaccination of the hog by the single method a dose of anti-hog cholera serum is given alone. This method produces immunity that may last no longer than four weeks.

The double method of vaccination consists in giving the hog anti-hog cholera serum and hog cholera blood.

Hogs showing visible symptoms of hog cholera or an abnormal temperature should be given anti-hog cholera serum only.

The doses recommended in the double method or simultaneous vaccination work vary but slightly with the recommendations of the different serum plants. Pigs weighing fifty to eighty pounds receive one-half of a cubic centimeter per pound of body weight. Hogs weighing eighty to one hundred pounds receive forty to sixty-five cubic centimeters, and hogs of from two hundred to three hundred pounds receive sixty-five to

ninety cubic centimeters per pound body weight. The dose of cholera blood is one to two cubic centimeters.

The injections of serum and cholera blood may be made within the arms, in the sides of the neck or in the insides of the thighs. Separate syringes should be used for the cholera blood and the serum. The cholera blood should not be injected in the same region as the serum. In small pigs not more than five cubic centimeters, and in large hogs not more than twenty cubic centimeters should be injected at any one point. The body temperature of the hog should be taken. A body temperature of 104 degrees in a young hog and a body temperature of 103½ degrees in the mature hog indicate fever. Cholera hogs in advanced stages of the disease or diseased hogs kept in cold, exposed pens may show lower body temperatures than mentioned.

Diseased hogs treated with serum should receive from one and one-half to twice the simultaneous-vaccination doses. Hogs having an abnormal body temperature, due to other causes than cholera infection, should be given serum alone, and later vaccinated by the double method. Any conditions, such as excitement, exercise, or heavy feeding which tend to raise the body temperature should be avoided.

Hogs to be vaccinated by the simultaneous

method should not be fed for about twelve hours before the work is done, and following vaccination, a light, laxative diet should be provided. Great care should be practiced in handling pregnant sows and the dose of serum increased.

The region of injection should be thoroughly cleansed and disinfected and the needle should be disinfected before and after each injection. Every care should be taken to prevent the contamination of the serum or the blood. The wounds produced by the needle should be covered by an antiseptic paste and the hogs given clean pens or range free from wallows or waterholes. These precautions should be taken to prevent the infection of the wounds which might produce abscesses, tumors or blood poisoning. Should abscesses form, they should be opened to allow drainage, and thoroughly cleansed.

Pigs weighing less than fifty pounds should not be vaccinated by the simultaneous method, but if the mother is vaccinated or if infection is present in the pens, the pigs should be given a protective dose of serum and later vaccinated by the simultaneous method. Pigs weighing ten to twenty pounds should receive ten cubic centimeters of anti-hog cholera serum, and pigs weighing from twenty to fifty pounds one-half cubic centimeter per pound, body weight.

The conditions met with in the field will cause

variations in the vaccination methods, but by the practice of necessary precautions and use of proper methods hogs can be immunized against hog cholera with no great danger from loss. Permanent immunity is conferred only when the simultaneous method is used.

WORMS

This is the most common trouble that we find in hogs. These worms may be found in the stomach, intestines, and sometimes in the lungs. There are many ways to free the hogs of worms, but like the horse, the worm treatment should be given on an empty stomach. When treatment is to be given the hog should go for twenty-four hours without any feed and then the worm medicine should be given in the slop or some palatable food.

Treatment—Santonin is a very good remedy for worms. It should be thoroughly dissolved in warm water and then mixed with the slop and fed to the hogs. An ounce of santonin is sufficient for fifty hogs weighing 100 pounds each. This should always be followed with a physic of Epsom salts. The salts are also to be given in the slop.

Prevention—The best way to handle worms in the swine is to prevent them. Hogs that are well fed and kept on a balanced ration are more able

to resist the worm than the poor hog. A hog that is fed plenty of mineral matter is not likely to be bothered with worms or any other form of disease. By giving it free access to various mineral substances such as wood charcoal, air-slacked lime, coal cinders or the pure coal, the hog will take care of the worm evil without further treatment. Always guard against foul water, for this is an excellent place for worms to develop.

THUMPS

This is a very common ailment among young pigs, and under certain conditions it will happen in the older hogs. It occurs most frequently in young pigs that do not have enough exercise. The symptoms are labored, jerky breathing similar to heaves in the horse. The easiest cure is to remove the cause, but this is not as easy as to prevent it. The best prevention is to have an abundance of exercise, and if this cannot be supplied the ration should be reduced. If the thumps become very severe the hog should be bled some by cutting off the end of the tail. Always keep plenty of salt to the young pigs, especially the ones that do not have enough exercise.

SCOURS

Scours in pigs usually results from improper feeding or by contagion. Improper feeding that

causes scours is an excess of feed or sudden changes in the feeds as from sweet to sour or from sour to sweet feeds. This usually comes just after farrowing or at weaning time. The sow should be very carefully fed just before and after farrowing time. At weaning time the pigs should be very carefully fed, especially when feeding skimmed milk. If the pig receives too large an amount of this it will get an excess of protein which will always start a case of the scours. Sudden changes in the feed will start scours in many cases, especially when the feed they are changed to is not as good as the regular rations.

Treatment—First seek the cause and remove it. If the pigs are not weaned the sow should receive the treatment. The only medical treatment that is needed is a good physic of epsom salts followed with some good wholesome food. After a case of scours the pens should be thoroughly cleansed or the pigs moved to new quarters.

LICE

The hog louse is a flat, oval insect of a dark color and about the size of a grain of wheat when full grown. It lives on the skin of the hog and saps the blood, which reduces the vitality of the animal, and when badly infested causes the hog to become very unthrifty.

Means of Destroying—The mud wallow is the best natural means of destroying the lice. There are many hogs that have free access to the mud wallows and water wallows that have never had lice. Hog lice cannot live under a coating of mud, consequently when a hog has access to a mud wallow and covers himself entirely over with mud, the lice will be destroyed or driven off. When a mud wallow is used it should be kept sanitary. A very good way to do this is to have a small stream of water running through it at all times. In case you cannot have a mud wallow you can use water instead if the wallow is kept sanitary. Other ways to destroy the lice is to use a dipping tank or spray the hogs with crude oil or kerosene.

PART IV.

1. ABSORBENT LINIMENT

℞

Tr. Iodine..... 2 oz.
Tr. Cantharides..... 2 oz.
Oil Organum..... 2 oz. Mix

Sig: Apply once every other day for five applications.

2. CONDITION POWDERS

℞

Fœnugreek ..... 3 oz.
Cream Tartar..... 3 oz.
Pwd. Gentian..... 3 oz.
Pwd. Sulphur..... 3 oz.
Pwd. Nitrate Potash..... 3 oz.
Pwd. Rosin..... 3 oz.
Black Antimony..... 3 oz.
Flaxseed Meal.....16 oz. Mix

Sig: Teaspoonful night and morning.

3. EPIZOOTIC

℞

Sweet Spirits Nitre..... 1 oz.
Tr. Aconite..... 1 oz.
Tr. Belladonna..... 1 oz.
Tr. Opium..... 1 oz. Mix

Sig: Teaspoonful three or four times daily.

4. DISTEMPER POWDERS

℞

Pwd. Licorice Root..... 8 oz.
Pwd. Fœnugreek..... 8 oz.
Pwd. Elecampane..... 8 oz.
Pwd. Blood Root..... 4 oz.
Tartar Emetic..... 1 oz.
Ginger ..... 2 oz.
Capsicum ..... 2 oz. Mix

Sig: Tablespoonful twice daily.

5. WORMS

℞

Calomel .....3 dram.
Tartar Emetic.....1½ dram.
Linseed Meal.....1 oz.
Fœnugreek .....1 oz. Mix
(Divide in three powders.)

Sig: Give one powder each night for three nights and follow with one and one-half pints raw linseed oil.

6. SCOURS AND DIARRHOEA

℞

Alum ..... 1 oz.
White Oak Bark Grd..... 1 oz.
Pdw. Catechu.....½ oz. Mix

Sig: Give at one dose in sweet milk or gruel; repeat if needed.

7. CAUSTIC LINIMENT

℞

Sulphric Acid..... 1 oz.
Turpentine ..... 6 oz.
Croton Oil..... 1 oz.
Bichloride Mercury.....60 grs.
Camphor Gum.....½ oz.
Cotton Seed Oil..... 8 oz. Mix
(To be prepared by druggist.)

Sig: Apply twice daily.

8. HEAVE REMEDY

℞

Balsam Fir..... 4 oz.
Balsam Copaiba.....4 oz. Mix
(Calcined Magnesia enough to make into balls. Divide into thirty balls.)

Sig: Give one each night and morning for a week.

9. MOSQUITO OIL. To Keep flies off horses.

℞

Carbolic Acid..... 2 oz.
Oil Pennyroyal..... 4 oz.
Spirits Camphor..... 4 oz.
Glycerine ..... 4 oz.
Oil Tar..... 8 oz.
Lard Oil..... 8 oz. Mix

Sig: Use as often as necessary.

10. COUGH POWDER

℞

Blood Root..... 2 oz.
Pwd. Ginger..... 2 oz.
Pwd. Fœnugreek ..... 2 oz.
Pwd. Licorice Root..... 4 oz.
Pwd. Lobelia ..... 1 oz.
Pwd. Tartar Emetic.....½ oz.
Pwd. Ipecac .....¼ oz.
Pwd. Opium .....¼ oz. Mix

Sig: Tablespoonful three times daily in wet bran. Keep horse well covered; change bed each day.

11. HEEL SALVE (Cracked Hoofs)

℞

Bismuth S. N..... 1 oz.
Red Ox. Mercury..... 1 dr.
Lanoline ..... 3 oz. Mix

Sig: Apply once daily.

12. BLISTER. Extra Strong.

℞

Lard ..... 4 oz.
Corrosive Sublimate.....½ oz.
Pwd. Cantharides..... 2 oz.
Turpentine .....½ oz. Mix

Sig: Apply and rub well until the desired effect is obtained.

13. HEAVE REMEDY

℞

Morphine ..... 50 gr.
B. W. Creosote.....
Tr. Lobelia.....
Oil Cloves.....
Oil Hemlock.....
Turpentine of each..... ½ oz.
Brandy ..... 1 pt. Mix

Sig: Tablespoonful every third day in bran mash. Two to five doses stops for from four to six months.

14. BARBED WIRE LINIMENT

℞

Fish Oil.....
Coal Oil.....
Turpentine.....
Of each..... 4 oz. Mix
(Simple but most effective.)

Sig: Apply two or three times daily.

15. SCRATCHES (and Heel Cracks)

℞

Sulphur ..... 1 oz.
Willow Charcoal..... ½ oz.
Lard ..... 1 oz. Mix

Sig: Wash with castile soap and apply salve.

16. SPAVIN BLISTER

℞

Tar ..... 4 oz.
Sulfuric acid..... 1 dr.
Oil Organum.... 4 oz.
Lard ..... 2 oz.
Pwd. Spanish Fly. 2 oz. Mix thoroughly

Sig: Apply every other day until well blistered.

17. PHYSIC BALLS

℞

Aloes ..... 1 oz.
Gamboge .....½ oz.
Licorice Rt. Pv.....½ oz.
Senna Pv.....½ oz.
Ginger .....½ oz.
Soap Powder.....½ oz.
Syrup to make mass..... Mix
(Divide into ten balls.)

Sig: Give one and repeat in four to six hours if needed.

18. PIN WORMS

℞

Quassia Chips..... 2 oz.
Boiling Water.....½ gal. Mix
(Let stand until cold; strain.)

Sig: Inject one pint each day for four days.

19. GENERAL LINIMENT

℞

Menthol ..... 1 dr.
Oil Organum..... 1 oz.
Oil Hemlock..... 1 oz.
Oil Sassafras..... 1 oz.
Oil Turpentine..... 1 oz.
Gum Camphor..... 1 oz.
Tr. Capsicum.....½ oz.
Tr. Myrrh.....½ oz.
Tr. Benzoin Comp.....½ oz.
Alcohol ..... 5 oz.
Coal Oil..... 5 oz. Mix

Sig: Bathe parts twice daily.

20. HOOF OIL.

℞

Neats Foot Oil.....4 oz.
Turpentine .....2 oz.
Oil Tar.....3 oz.
Oil Organum.....1½ oz. Mix

Sig: Apply once daily.

21. LIQUID BLISTER

℞

Pwd. Cantharides..... 2 oz.
Turpentine ..... 6 oz. Mix

Sig: Rub in well every other day until well blistered.

22. CONCEPTION POWDERS
(For backward mares)

℞

Rosin ..... 2 oz.
Nitrate Potash..... 4 oz.
Sulfur ..... 4 oz.
Iron Carbonate..... 1 oz. Mix

Sig: Mix with peck wheat bran and feed common handful three times a day for three weeks before taking horse.

23. COLIC

℞

Tr. Asafœtida.....1 oz.
Tr. Ginger.....1½ oz.
Chloroform ..... ½ oz.
Arom. Spirits Ammonia...3 oz. Mix

Sig: Tablespoonful every fifteen or twenty minutes.

24. RING BONE AND SPAVIN

℞

Bichloride Mercury.....10 grs.
Tr. Arnica ..... 2 oz.
Oil Peppermint.....12 oz.
Tr. Iodine.....12 oz. Mix

Sig: Give rest and apply every morning for five days.
(Softens and prevents cracks)

25. RACE HORSE LEG AND BODY WASH

℞

Oil Mustard (Ess.)..... 2 dr.
Tr. Capsicum..... 1 oz.
Alcohol .....15 oz. Mix

Sig: Tablespoonful to a quart of water and bathe.

26. TONIC

℞

F. Ex. Gentian.....½ oz.
Glycerine .....½ oz.
Tr. Iron..... 1 oz.
Hall's Sol. Strychnia.....¼ oz. Mix
Dilute alcohol (50 per cent) to make one pint.

Sig: Tablespoonful three times daily.

27. KEROSENE LINIMENT

℞

Kerosene ..... 2 oz.
Tr. Opium..... 4 dr.
Tr. Arnica..... 5 dr.
Tr. Straminonium..... 4 dr.
Tr. Camphor..... 5 dr.
Aromatic Spirits Ammonia. 6 dr.
Oil Organum..... 4 dr.
Chloroform ..... 1 oz. Mix

Sig: Bathe parts twice daily.

28. HEALING POWDER

℞

Zinc Oxide..... 1 oz.
Calomel ..... 1 oz.
Bismuth ..... 1 oz.
Burnt Alum..... 4 oz.
Boric Acid.....16 oz.
(Mix well and sift.)

Sig: Dust on wound twice daily.

29. EYE WATER

℞

Lloyd's Hydrastis.....15 drops
Listerine ..... 2 drams
Glycerine ..... 1 dram
Borax ..... 6 grains
Water ..... 4 oz. Mix

Sig: Medicine-dropper half-full in eye twice daily.

30. TONIC POWDER

℞

Pwd. Gentian..... 4 oz.
Pwd. Ginger..... 4 oz.
Caraway Seed..... 4 oz.
Flaxseed Meal..... 4 oz.
Salt ..... 4 oz.
Nitrate Potash..... 4 oz. Mix

Sig: Tablespoonful in each feed.

31. HORSE SALVE. For Sores, Etc.

℞

Pwd. Borax..... 4 drams
Animal Charcoal..... 2 drams
Oil Tar.....40 drops
Camphorated Oil.....½ oz.
Lard ..... 4 oz. Mix

Sig: Apply three times daily.

32. THOROUGHPIN

℞

Tr. Iodine..... 2 oz.
Spirits Camphor..... 1 oz.
Ammonia ..... 1 oz.
Turpentine ..... 1 oz.
Tr. Arnica..... 2 oz.
Olive Oil..... 1 oz. Mix

Sig: Rub affected parts twice daily.

33. COLIC BALLS

℞

Pwd. Opii.....60 gr.
Pwd. Castile Soap..... 2 oz.
Pwd. Camphor..... 2 oz.
Pwd. Ginger..... 1½ oz.
Pwd. Licorice Root..... 1 oz. Mix

(Make eight balls with molasses.)

Sig: One ball every hour until relieved.

34. KIDNEY TROUBLE

℞

Fld. Ext. Buchu..... 1½ oz.
Acetate Potash..... ½ oz.
Spirits Juniper.....12 oz. Mix

Sig: Three tablespoonfuls twice daily.

35. CHILLS.

℞

Quinine ..... 2 dr.
Arom. Sulfuric Acid..... 1 oz.
Whiskey to make..... 8 oz. Mix

Sig: Tablespoonful three times daily.

36. FEVER

℞

Fl. Ex. Belladonna.....½ oz.
Fl. Ex. Nux Vomica.....½ oz.
Glycerine ..... 2 oz.
Sat. Sol. Nitrate Potash.... 5 oz. Mix

Sig: Two tablespoonfuls every three hours.

37. BLADDER TROUBLE

℞

Uva Ursi Fld. Ext..... 2 oz.
F. Ex. Buchu..... 1 oz.
Sat. Sol. Nitrate Potash.... 1 oz.
Gin .....12 oz. Mix

Sig: Tablespoonful twice daily.

38. CHEAP GALL CURE

℞

Pwd. Camphor..... 1 oz.
Pwd. Prepared Chalk..... 6 oz.
Burnt Alum..... 4 oz. Mix

Sig: Apply twice daily.

39. BLOOD PURIFIER

℞

Potassa Nitrate..... 1 oz.
Black Antimony..... 1 oz.
Pwd. Rosin..... 1 oz.
Sulfur ..... 2 oz. Mix
(Divide into eight powders.)

Sig: One powder twice daily.

40. WHITE LINIMENT

℞

Ammonia Chloride.....3 dr.
Dissolve in Water.....4 oz.
Turpentine .....1½ oz.
Oleic Acid.....2 dr.
Add water to make.....8 oz. Mix

Sig: Rub affected parts three times daily.

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